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SAFO EDITORIAL POLICY: The purpose of the SAFCH is to "promote interest in the history and modeling of the a/c of the smaller countries". In support of this goal, the SAFO will publish articles on all aspects of aviation, both military and civil, from all periods of time and for all the smaller countries. (1) All manuscripts submitted by members will be published in the next available issue of the SAFO. (2) Subscription money will be used only to print and mail the SAFO; there will be no "miscellaneous" column in our budget. And, (3) members are encouraged to sponsor subscriptions for organizations, libraries, individuals (especially those in countries where US funds are difficult to obtain).

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A limited number (one, unless otherwise indicated) of the following are available from the editorial office. (All money collected for the sales of Eastern European kits and books go to send needed material to SAFCH members in these countries.) All prices are in US \$ and include surface postage.

POLISH PROFILES (TBU): RWD-8 (5), Lubin R.XIII (4), TS-8 Bies, Mi-1, MiG-3 (3), MiG-19 (3), Beaufighter (4), Spitfire (38), Wellington (13), Mustang (11). \$3.00 each.

KIT: #45 & #46 (See abstracts) \$2.00 each. One subscription to the magazine of IPMS-BELGIUM is available through the SAFCH. Send \$6.00 to the SAFCH and you will receive a one-year's subscription to KIT.

VIRUS PLASTICUS: 1/82, 2/82, & 3/82 (See abstracts) \$2.00 each. Two subscriptions to the magazine of IPMS-Switzerland are available through the SAFCH. For each, send \$6.00 to the SAFCH and you will receive a one-year's subscription to VP.

MODELLERS' MONTHLY 3/82, 4/84, & 7/82 \$1.00 each. One subscription to the magazine of the Plastic Modeller Society of Singapore is available through the SAFCH. Send \$6.00 to the SAFCH and you will receive a one-year's subscription to MODELLERS' MONTHLY.

MALLARI (IPMS-Finland) #38, #39-40, #41 (see abstracts) \$1.00 each for single issues and \$2.00 for double issue.

RT July '77 ("Gooney Bird Sketchbook", "Canadian Military Aircraft - Part 14 Avro Anson I") \$2.00

IL NOTIZIARIO 1/82 ("Thunderjets in Italy") \$3.00.

MILITARY JOURNAL #11 ("Fokker DR.1 Lt. Paul Baumer", "Paris Air Show '79") \$2.00.

STAR KIT #1: (See review in SAFO #25) \$3.00.

THE AIRCRAFT OF THE SWISS AIR FORCE SINCE 1914. 361 pages with photos and 3-view drawings of every aircraft used by the Swiss Air Force. \$20.00.

DIE FLUGZEUGE DER SCHWEIZERISCHEN FLIEGERTRUPPE SEIT 1914. (as above) \$15.00.

MIKRO KITS: (1/72) LWS Czapla \$5.00.

RUCH KITS: MiG-15 \$4.00

USSR KITS: (1/100) Il-18 \$10.00.

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AUSTRALIA

APMA (Australian Plastic Modeller's Association, PO Box 51, Strathfield, N.S.W. 2135)

3/82 (20 pages) "Macchi in Warpaint" 3 pages including 2 pages of scale drawings of camouflaged RAAF MB-326H. "Liberators in Qantas and BOAC Service" 6 pages including 2 photos and 3 pages of scale drawings. "453 Sqn RAAF in the UK" side-view drawing of Spitfire IX 'FU-?'. "Patches' Porter" 4 pages including 3 pages of scale drawings and color chips for camouflaged Australian Army Turbo-Porter. "Bell 206 Interiors" one page of 3 photos.

AUSTRIA

OFH NACHRICHTEN (Oesterreichische Flugzug Historiker, Kannwegasse 1/15, A-1150, Wien)

3/82 (36 pages) "Lohner 'L' Seeflugzeuge" 29 pages including 9 photos, 9 pages of 1/72-scale drawings (L, T, Te, & Tl), and individual aircraft histories.

PANORAMA (IPMS/AUSTRIA, Nordmanngasse 11-13/4/6, A-1210 Wien)

4/82 (36 pages) "Die Wolkenquirl der Oesterreichischen Luftstreitkräfte - aus 'Bella Italia' und den USA Der Sonderfall 212" 14 pages including 5 photos and 9 pages of sketches of details.

BELGIUM

KIT (IPMS Belgium, Rue des Eburons 35, 1040 Bruxelles; 4 issues for 400 Belgian francs.)

#46 (34 pages) "Israeli Air Force - Part 2" 18 pages including photos of Harvard, Ouragan, Noratlas, & Magister; and 1/72-scale drawings of Meteor 8 (2), Texan (3), Sikorsky S-55, Mosquito (3), Ouragan (2), PT-17, Sikorsky S-58, Mystere IVA (2), Super Mystere (2), MiG-17, MiG-21, Magister (2), F-4E, and F-15. "Le Fokker EV/DVIII en Belgique" 3 pages including 4 photos and a page of 1/72-scale drawings. Photos: Belgian Fiat CR.42, Gladiator, & SV-4b.

BRAZIL

SOUTH AMERICAN AVIATION NEWS (Caixa Postal 521b, 09720 Rudge Ramos, Sao Paulo; 6 issues for £7.00; back issues US \$2.00 each.)

Nothing received since #31.

CANADA

HIGH FLIGHT (Box 393, Stittsville, Ontario K0A 3G0; 6 issues for CAN \$15)

7/8 '82 (40 pages) "Chronology 1928" 12 photos (Curtiss HS2L, Varuna, DH-9A, Siskin, Avro 504NS, Avro 504K, Vigil, Fairchild FC-2/2W. "Early Hurricanes - The Story of No.10401 Fighter Squadron, Part Two" 5 pages including 14 photos. "The Canadian Vickers Vedette in the RCAF" 11 pages including 25 photos and a scale 3-view drawing. "The Mid-Canada Line - The Intermediate Early Warning System 1958-1965" 11 pages including 28 photos. "Canada's First 'Warplane' was a Monumental Military Misfit" 4 pages including 2 photos of the Burgess-Dunne. "Airman's Album 10" 10 photos of WWI aircraft.

RANDOM THOUGHTS (IPMS CANADA, Box 626, Stn. B, Ottawa, Ontario K1P 5R7; 6 issues for \$12.00 in US, \$13.00 others)

2/82 (24 pages) "Lancaster B Mk II" 5 page conversion article with 6 photos and 3 pages of drawings. "Aircraft and Markings: > Bombing & Gunnery School" 3 pages including one photo and 2 pages of drawings (target-towing Battles, Norseman, Bolingbroke, & Anson). "Australian UH-1H's" 4 pages including 6 photos and 2 pages of drawings.

ENGLAND

MAGAZINE (IPMS ENGLAND, Flat 4, 18 Delancey St., London NW1 7NH; 6 issues for US \$20.00 + \$1.00 joining fee)

7/8 82 (22 pages) Photos: Argentine Agusta A109, UH-1D, & Pucara 'A-549'. "KP Close-Up": A visit to Kovozavody Prostejov. "Israeli Defence Force Aircraft" 2 pages including 5 side-view drawings (one Avia S.199 and

4 Spitfires).

9/10 (22 pages) Nothing of small air force interest.

MILITARY AVIATION REVIEW (East Cliff, Stotfield Rd., Lossiemouth, Moray IV31 6QT, Scotland; 6 issues for £10.20)

Nothing received since 6/7 82.

FINLAND

MALLARI (IPMS FINLAND, PL 798, 00101 Helsinki 10; issues #41-44 US \$6.50, add \$1.00 for airmail and \$1.50 for personal bank cheque redemption)

Nothing received since #41.

FRANCE

LA VITRINE DU MAQUETTISTE (IPMS FRANCE, 3 rue de l'Amiral Roussin 75015 Paris; 4 issues 60FF surface, 80FF air; back issues 12FF; "La Lettre de l'IPMS" 20FF.)

#16 (44 pages) "Les SO 1220 et 1221 Djinn" 6 pages including 6 photos and a 1/48-scale drawing. "Canadair CL-215" 2 pages including 4 photos (one Yugoslavia and 3 French machines). "Le N.A. Rockwell OV-10A Bronco" 8 pages; no small-air-force schemes but 1/72-scale drawings and many drawings of details.

GERMANY

MITTEILUNGEN (IPMS GERMANY, Oertzenweg 12b, 1000 Berlin 37; DM 42.00 Europe, DM 49.00 USA, DM 55.00 Japan, DM 61.00 Australia)

10-82 (30 pages) Nothing of small air force interest.

11-82 (30 pages) Nothing of small air force interest.

12-82 (30 pages) Nothing of small air force interest.

ITALY

IL NOTIZIARIO (IPMS ITALY, CP 182, 41100 Modena Ferravia)

1/81 (24 pages) "Gli Ultimi Mustang" 14 pages including 21 photos and 7 pages of 1/72-scale drawings of Cavalier Mustang, Turbo Mustang, and Piper Enforcer. "Buffalo Catturati" 2 pages with side-view drawings of two Brewster Buffalos in Japanese markings.

2/81 (24 pages) "Spit & Griffon a Bassa Quota" 5 pages including 6 photos and 2 pages of 1/72-scale drawings of Spitfire XIIc. "Breda 88" 6 pages including 4 photos; a 1/72-scale drawing; and 2 pages of details (instrument panel, landing gear, etc.). "Cessna O-2" 4 pages including 5 photos and 2 pages of 1/72-scale drawings.

JP-4 (CP 1550, 50100 Firenze; L 27.000 Europe, L 30.000 elsewhere)

6 82 (100 pages) Photos: Angolan Yak-40 D2-TYB; Zaire Buffalo 9T-CBA; Denmark Gulfstream III F-249, UAE CASA C.212; Surinam Islander SAF003; Corsair II Greece (color) & Portugal. "SIAI Marchetti S.67" one photo and scale 3-view.

7/8 82 (116 pages) Photos: Peruvian AF C-130 '382' & B.707 '371'; Indonesian AF B.737 'A1-7301'; Dutch F-16 'J-017'; "Bavarian Air Force" G.91T3 '34+02'; and SAAF Mirage F.1 (color).

9 82 (100 pages) Photos: Falkland Twin Otter 'VP-FBB' (color); Algerian AF C-130 '7T-VHO' (color); Danish Gulfstream III 'F-249'; and West German Lynx '83+04'. "Aerei Tedeschi per i Soviet Ungheresi" 2 pages including 4 photos (2-seat Fokker D.VII, LVG C.V, Brandenburg C.I & W.13). "Dopo le Falkland" 5 pages including 6 photos (Argentine AF A-4P '302'). "Il Museo di Rio de Janeiro" 3 pages including list of aircraft and 6 photos (A-20K, B-25J, Stearman A7b, Stinson Reliant (color).

10/82 (86 pages) Photos: Iraq SH-3D and Zimbabwe Hawk (color). "Gianni Caproni" 5 pages including 6 photos (Ca.1, Ca.2, Ca.48, and Ca.133).

SOUTH AFRICA

AFRICAN AIR REVIEW (AVIATION SOCIETY OF AFRICA, PO Box 1413, Alberton 1450; 6 issues for US \$12.00)

5/7 82 (24 pages) "Aircraft of the SAAF: DH4&9 Variants" one page of text. "African Air Forces: Zambia" 4 pages of individual a/c histories (Pembroke, Dakota,

(Continued on next page.)

(Continued from Preceding page.)

Chipmunk, Beaver, Caribou, HS748, Do-28, SF260, MB326, Jastreb, Galeb, DC-6, Yak-40, SAAB 105, FI-17, Buffalo, AB 205, AB 206, AB 47G, Mi-8, Shenyang F-6. Photos: Bophuthatswana Army Air Wing Alouette III 'T200' and Partenavia P68C 'T190'. (Editor's note: This is rapidly becoming one of the most valuable small-air-force publications. I am always looking for readers interested in sponsoring an SAFO subscription for a South African member in exchange for a subscription to the AFRICAN AIR REVIEW.)

SPAIN

STAR KITS (Guitard, 43 6°. Barcelona-14 (ex Witardo), SPAIN; 12 issues 2.700 ptas in Europe and 3.100 ptas in America. Coordinator for the Americas: Georg von Rauch)

2 82 (76 pages) "Agusta Bell AB-205 S.A.R." 4 page modeling article with photos of 'EC-SSJ' (color) and '752011'. "Los Messerschmitt BF-109 en Espana" 11 pages including history and color schemes (19 photos and 6 color profile drawings); covers a/c in Condor Legion, Nationalist (Civil War and after), & Republican service.

3 82 (76 pages) Photos: Spanish CL-215 '43-17', Alouette III 'HD-16-6', CH-47 'ET-404', Bo-105 'ET-150', F-5A 'A-9-047' (camouflaged) & A-9-046', C-101 '411-01', T-33A '41-47', Bonanza '421-36', Matador '008-14', Caribou 'T-9-9', T-6 '742-104', Baron '744-02', Do-27 '407-13' (?), C-212 '744-16', L-19E '407-2', and Hs 123 '6-131'. "Chenillette Renault UE"; not an aircraft but good photos and scale plans for an interesting creepy-crawler.

SWITZERLAND

VIRUS PLASTICUS (IPMS SWITZERLAND, Olivenstr. 2, 9320,

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"Just a short letter to let you know a few things happening Down Under. No. 2 Sqd. RAAF (Canberras) has been disbanded and all photo survey work is now done by a leased Lear Jet flown by 6 Sqd. VF 805 and VS 816 RAN (Skyhawks & Trackers respectively) were also disbanded and their aircraft transferred to training squadrons. Last, but not least, the Government has ordered 18 Aerospace Squirrel helicopters for the RAAF and RAN (12 & 6 respectively) for use as trainers and SAR.

"In response to Dan Hagedorn's letter in SAFO #25, the serial numbers known for the Guatemalan PC-7s are as follows: 211 (c/n 226 ex HB-HDF), 215 (c/n 132 ex HB-HCV), 218 (c/n 130 ex HB-HCZ), 219 (c/n 227 HB-HDG), 220 (c/n 133 ex HB-HCW), 229 (c/n 134 ex HB-HCX), 267 (c/n 131 ex HB-HCU), 274 (c/n 135 ex HB-HCY), 278 (c/n 225 ex HB-HDE), 284 (c/n 224 ex HB-HDD), ? (c/n 228 ex HB-HDH), ? (c/n 229 ex HB-HDI).

"This information was obtained from MILITARY 1982 by John Andrade (Aviation Press). This is an excellent book for all SAFO members as it tries to give as much detail as possible on all the world's air forces. It contains serial numbers, construction numbers, squadron usage (where known), and some of the best colour and b&w photos of small air forces that I've seen in one book. I highly recommend this book to all my fellow members."

Mike Mirkovic (SAFCH #465), 11/32 Curlew St., Bondi, NSW 2026, AUSTRALIA

MILITARY 82 by John Andrade. This book covers the structure and current equipment of the world's air forces (including naval and army forces). The author is indeed a very brave man. In 368 pages he covers 169 countries. For each air force, a brief history precedes a list of squadrons, types, and bases. This is followed by a type-by-type review including serials, fates (e.g., w/o and date), c/n's, and previous identities. In some cases, a map showing the locations of the bases is included. Coverage of a given country varies from a few lines (e.g., the Seychelles where the only 'military' aircraft is an Islander operated by the local Commissioner of Police) to 79 pages (for the United States). The information appears to be generally accurate for spot checks against available sources have turned up remarkably few discrepancies.

Arborn; 4 issues for Sfr 24)

3/82 (32 pages) "De Havilland DH-112 Venom (4)" 9 pages including 6 photos and 5 pages of 1/15-scale drawings of cockpit interiors of Mk.I, Mk.4, & Mk.IR. "Welche Vaku-Modelle gibt es?" list of available vacuform kits in 1/48 and 1/32 scale.

USA

WWI AERO (Leonard Opdycke, 15 Crescent Rd., Poughkeepsie, NY 12601; 5 issues \$15)

9 82 (82 pages) "A Decorator's Guide to Liberty DH-4 Squadrons" 7 pages including 12 side-view drawings. "Ansaldo SVA-10 SPA" 3 pages including scale drawings. "Sopwith Triplane" 26 pages including 34 photos and 7 pages of drawings. "Models" & "More on Color" 8 pages of interest to the modeler including scale drawing of 1911 Voisin Canard. "Nielsen & Winter Jager" 4 photos and scale drawings of Danish scout aeroplane.

DIRTY PLASTIC (IPMS PHOENIX, 509 W. Camino Dr., Phoenix, AZ 85021; 4 issues for \$6.00.)

Fall 1982 (20 pages) "Jolly Green Giant" side-view drawing of Israeli HH-53. "Canadair & CAC Sabre" 5 pages including side-view drawings of Sabres in the markings of Italy, Canada, Bangladesh, Columbia, West Germany, Greece, Yugoslavia, Pakistan, South Africa, Switzerland, Sudan, Turkey, Australia, Indonesia, and Malaysia.

Winter 82/83 (20 pages) "Irish Bosses" one page with drawings about how to make decals of the Irish national insignia. "Captive Dewoitine" one page of drawings including 2 Italian machines. "Contributions & Corrections" one page of drawings of 2 Bolivian and 2 Honduran Sabres.

To compliment the text, there are 204 photographs (108 b&w and 96 in colour) and 4 color pages illustrating the current national insignia. The colour reproduction is particularly well done. The book also contains such useful items as a "numeral explanation" in which the numbers 0-9 are shown in Arabic, Burmese, and Thai characters. One minor irritation is that dates are given in a system that is strange to me; e.g., 11 February 1956 becomes 11FE56. Perhaps I'll become used to this since I will be using this book quite a lot.

Overall a very useful addition to the library of any aviation enthusiast. Many others have written "Air Force" books, but I feel sure that this is the one we really need. If you are looking for a real enthusiast's work on the world air forces, then this is it."

Graham Turner (SAFCH #424)

"I can supply copies of MILITARY 82 from stock at £9.95 post free to SAFCH members.

"I shall shortly be importing Falcon Industries vacuform kits from New Zealand - such things as 1/72 MB5 (also in 1/48), 1/48 Seafire 47, Sea Fury, and Spitfire 22/24 conversion set. Also 1/32 Bc.2c. I've built the MB5 in 1/72 and it's quite splendid.

"More colours are available from Precision Paints here in Cheltenham: Of interest to the small-air-force modeler are Swedish Air Force: M210 Blagra 058 (blue-grey matt), M211 Rod Orange 227 (red-orange gloss), M212 Ljusgrön 322M light green matt), M213 Mörkgrön 326M (dark green matt), M214 Brun 507M (brown matt), & M215 Svart 093M (night black matt); and Finnish Air Force: M220 Olivinvihrea 1934-53 (olive green), M221 Hopeanharmaa 1933-44 (light grey), M222 DN-Vari Vaaleansininen (light blue), M223 Itarintamakeltainen (insignia yellow gloss), M224 Harjoituskone (insignia orange gloss), M225 Tummanvihrea 1919-n.34 (blue-green), M226 Vihrea 1980 (light bronze green), M227 Tummanvihrea 1980 (dark olive drab), & M228 Vaaleanharmaa 1980 (light grey). Other lines of colours include: Russian Air Force WWII; pre-WWII, WWII, and post WWII RAF; WWII and post WWII Luftwaffe and US Air Force and Naval. All colours come in 1/2-fluid ounce (15 ml) cans, priced £0.28."

Graham Turner (SAFCH #424), 7 Eldorado Rd., Cheltenham, Glos., GL50 2PJ ENGLAND

Avia BH.21

The Czechoslovakian air arm started life with a motley collection of Austro-Hungarian and German aircraft left over from the First World War. To these were added some Russian Anatsras and French Spads in 1919. The newly created Czechoslovakian aircraft industry began to design and build indigenous replacements for these foreign types. This was particularly required for the fighter elements of the Republic as the number of Spads in service was decreasing steadily due to various technical problems. The Aero A.18 and Smolik S.4 biplanes together with the Avia BH-3 low-wing monoplane were produced in small numbers, but they were not successful. The S.4 was a disappointment possessing poor flying qualities and maintenance problems and was withdrawn after only six months service and returned to the factory for reconstruction. The Avia BH-3 was difficult to fly and was only issued to experienced pilots. The burden of fighter defence thus fell on the 20 Aero A.18 and remaining Spad fighters.

The difficulty in designing a suitable replacement fighter was reflected in the number of prototypes built. This account follows the fortunes of the Avia designs by Paul Benes and Miroslav Hajn, but other companies produced as many failures. Benes and Hajn had developed the BH-3 from their BH-1 and BH-2 sporting monoplanes. The BH-4 was a redesign of the BH-3, but performance was marginally inferior to the earlier type, and so it was abandoned. This was followed by two parallel designs: the BH-6 biplane and BH-7A parasol monoplane. Both were to be abandoned after a series of crashes. The BH-8 was a biplane which owed a lot to the BH-6 and BH-7A, but was a completely new design. Progressive refinement led to the BH-17.

On 31 December 1923, the BH-17 was test flown by Czechoslovakian military pilots in competition with the Aero A.20 and was acclaimed as better in speed and manoeuvrability, reaching a maximum speed of 235 km/hr and climbing to 5000 meters in 16 minutes. Pilot's opinions were so positive that the Ministry of Defence (MNO) placed an order for 24 on the 18th of June the following year.

The BH-17 retained all the constructional features of its predecessors. It was a slightly staggered biplane with the upper wing of smaller span than the lower wing. "I" type interplane struts were fitted and the cabane was a pyramid structure which contained the oil cooler and tank. Ailerons were carried on the lower wings only. An Avia characteristic was the lack of any fixed vertical tail surfaces. Radiators were fixed to the undercarriage legs. The BH-17 was the first Avia biplane fighter to enter production. Problems with the Skoda-built Hispano Suiza HS 8Fb 200 hp engine led to the contract being finalized only towards the end of 1924. The majority of these aircraft went to the 1st Air Regiment at Prague in March, 1925. Although they had good flying qualities, maintenance was not easy and they were plagued with engine troubles, and were soon relegated to the reserve park after about 12 month's service.

Benes and Hajn's next design was a low-wing monoplane, the BH-19, with which they tried to break the supremacy of the biplane fighter configuration. The type was fast, but was hard to control showing a marked tendency to spin and experiencing aileron flutter. If these shortcomings could be overcome, the MNO indicated that an order would be forthcoming. The prototype was lost on speed trials when the testpilot, Cernohous, fainted. A second prototype was built and flown but the order for 66 BH-19 fighters was cancelled and Avia was requested to discontinue this line of development. Benes was to suggest that the type was abandoned because of the conservatives in the MNO. However, new fighters were urgently needed, and there seemed to be more promise in developing the BH-17. Also, Avia was in no financial position to develop the type as a private venture.

In November 1924, Benes reached agreement with Hajn and the Avia factory chief, Bondy, on the modernization

of the BH-17. The aerofoil section was changed, the cabane pyramid structure was removed greatly improving forward vision, the upper wing being supported by a simple arrangement of tubular steel struts. The "I" type interplane struts were replaced by steel "N" struts. The oil cooler was moved to the bottom of the fuselage, and a retractable radiator was fitted between the undercarriage legs. In spite of all these changes, many of the parts were identical with those of the BH-17, so construction of the prototype BH-21, as the new type was designated, proceeded quickly and on 7 February 1925, the prototype was given to the 32nd Air Regiment for preliminary testing.

The improvement over the BH-17 was readily apparent, and after official MNO tests in March at Kbely airfield, the BH-21 was ordered into production. A maximum speed of 245 km/hr was measured during tests, and flying qualities were excellent in all flight regimes, the aircraft being particularly suited to aerobatics. The first series of BH-21 fighters was produced without any trouble, and were phased into Czechoslovakian air units by June 1925. The whole initial contract of 66 fighters was supplied by 24 September. These were allocated as follows: 36 to 1st Air Regiment; 3 to 2nd Air Regiment; 18 to 3rd Air Regiment; 8 to the Cheb Flying School; one to the VLUS aviation institute.

Pilots liked the new aircraft which was equal to any other nation's fighter at this period. However, problems soon began to appear with this first series. Faults became apparent as more aircraft entered service and were subjected to the rigors of service life. The main and gravity fuel tanks were constructed of welded duralumin and were cracking. The same problem was experienced with duralumin tubing and engine covers. Problems were also occurring with the Weyman carburettors. Grave as these problems were, they were nothing when compared with the problems facing the BH-21's competition, the Letov S.20, which had the same troubles plus others which included fracturing of the engine mounts. Moreover, the flying characteristics of the S.20 were poorer than those of the BH-21.

The BH-21 was refined on the assembly line. Those aircraft already in service were returned for modification. Production did not stop with the first batch as the MNO ordered a second series of 25 aircraft on 12 October 1925.

The BH-21 achieved prestigious success in the 1925 "Speed Race for the Prize of the President of the Republic" which was held in September. A special clipped winged version, the B.21R, won with a mean speed of 300.59 km/hr over a 200 km base; and 301.33 km/hr over a 100 km base - a new state record! The wing area had been reduced to a mere 13.5 square meters, and the engine was an improved Hispano Suiza of 400 hp fitted with a Reed-Levasseur metal propeller. Sheet type Lamblin radiators were faired into the lower wing undersurface. Third place, behind the Letov S.8 (a purpose-built racing aircraft) was taken by Hess in a standard BH-21 at a speed of 248.44 km/hr. The BH-21 also won the 250 kg load category, Lhota's aircraft also having the improved engine. The third place winner in this class was a standard BH-21 piloted by Merhout.

Avia designed a lighter, lower powered aerobatic advanced training version of the BH-21 without armament as the BH-22. The installation of the Hispano Suiza 180 hp engine forced some changes to the general arrangement of the aircraft. It was shorter, had less stagger, and the shape of the rudder was changed. Tested in August 1925 by the MNO Commission, pilots were enthusiastic about the type and 30 were ordered.

Testing of the prototype BH-22 was carefully undertaken, the experiences of the BH-21 being fresh in all minds. The first series of 18 BH-22 fighter trainers was order-

ed on 20 July, but as the first BH-22 had entered the production line in April, the order was completed in the same month as the order was signed. By the simple expedient of arming the BH-22 and fitting navigation lights and an illuminated instrument panel together with racks for two Michelin flares, the BH-22 was turned into the BH-23 light night fighter! In fact, a contract for two BH-23s was signed four days before the contract for the BH-22 trainers. Both of these BH-23 night fighters were used by the 3rd Air Regiment, no further production of the type being undertaken.

A total of 39 BH-22s were produced, which included the prototype. A second contract for 20 aircraft was placed in 1927, and one was owned by Avia. The aircraft of this second series were delivered slowly up to October 1928. The majority of these went to the Fighter School at Cheb, and every Air Regiment had two BH-22s on hand for aerobatic training. Flying characteristics of the BH-22 were as good as the BH-21, and this enabled a high quality of fighter pilot proficiency to be maintained. One BH-22, at least, ended up on the civil register as OK-LIW of the Plazen Aeroclub.

Towards the end of 1925, a version of the BH-21 with the Gnome-Rhone Jupiter 9-cylinder radial engine of 420 hp was constructed. Known as the B.21J, it was test flown in July 1926. While these tests showed an unexpected improvement in climbing ability, they also showed unexpected and unpleasant loss of speed. This aircraft was reworked and was to eventually result in the successful BH-33 fighter.

On 15 March 1926, an order for a third series of 25 BH-21 fighters was placed. The last BH-21, serial B.21.117, was delivered to the MNO on 15 July 1928. The aircraft were not delivered in serial number order. A total of 139 BH-21 fighters were constructed, the two additional aircraft being used by Avia for its own purposes. One was built as the B.21J, the other was left

3rd Air Regiment
Command in Nitra
1924-1931
(black on white)



(Editor's note: There are two kits of the Avia BH.21, both in 1/72 scale, and both from Czechoslovakia. The earliest is one of those outstanding vacuform kits from KP Slovakia, and would be highly recommended if it were not for the recent release of an injection-molded kit by Kovoavody Prostejov. Both kits have excellent surface detail; if anything, the vacuform kit has the advantage here because of its better representation of fabric areas. However, the injection-molded kit will go together quicker, it contains a comprehensive decal sheet, and it should be easy to obtain through your Czechoslovakian pen pal.

The KP kit is up to their usual high standard - absolutely accurate in outline, with good surface detail, but requiring a not unsubstantial amount of work to clean up the smaller parts. My kit went together well, except for some difficulties with the center-section struts. (I wish all biplane kits were engineered as well as those marvelous Monogram 1/72-scale biplanes.) Rigging is fairly easy except for the fact that all landing and flying wires are double.

The instruction sheet is, as expected from KP, outstanding; including complete drawings (side, top, and bottom views) for all four aircraft featured on the decals sheet: 1) Aircraft "1" of the 3rd Air Regiment, Nitra (black Slovak cross on white field) with brown, tan, and green upper surfaces and silver lower surfaces, and "flag" type national insignia. 2) Aircraft "C 114" of the VLU (Central Flying School) in khaki-green and silver with the trisected roundel form of national insignia. 3) Aircraft "G 9" of the 1st Air Regiment, Prague (white lion on blue field) with same color scheme and in-

in Brussels after winning an international competition for fighter aircraft in May 1926. The Belgium SABCA factory was to produce the type under licence. This was a considerable achievement for the Czechoslovakian aviation industry and for Avia in particular.

By continuous improvements, the faults of the BH-21 were eliminated and for the first time the Czechoslovakian air arm had a fighter aircraft of indigenous design which was the equal of any in the world. The BH-21 and BH-22 gave safe aerobatic training and many Czechoslovakian pilots gained their aerobatic experience on these types. In fact, so good were their aerobatic qualities that both types were to continue in use long after the arrival of more modern types. On 12 March 1934, the MNO ordered 10 Bs.21s which were unarmed BH-21s, for the purpose of aerobatic training. All 10 went to the Aviation School at Prostejov.

Two particular pilots who gained national attention on the BH-21 were Malkovsky and Knazikosky who flew all red aircraft in aerobatic displays. Malkovsky's aircraft has a special aerobatic carburettor and strengthened landing wires; Knazikosky's aircraft had only the aerobatic carburettor. Unfortunately, both were to lose their lives in these aircraft. Their deaths were a great blow to Czechoslovakian aviation. In 1934, the Avia B.122 was introduced as the successor to the B.22, the type's designation reflecting the tribute paid to the older design.

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AIR ENTHUSIAST, Vol. 2, No. 6, June 1972.

Acknowledgement to T. Goworek and Z. Ciainski for their assistance.

Colin Owers (SAFCH #261), PO Box 73, Boorowa, NSW 2586, AUSTRALIA.



1st Air Regiment
Command in Prague
1931-1938
(white on blue)

signia as 2. And, 4) Staff Captain F. Malkovsky's all-red aerobatic airplane with national insignia and badge of the 1st Air Regiment.

CZECHOSLOVAKIAN AIR FORCE 1918-1970, Aircam Aviation Series S.5 (It was a black day when this series was discontinued.) contains a photo of BH.21 "S 7" of the Aviation Research Unit, and a color side-view drawing of a 3rd Air Regiment BH.21 in the three-tone camouflage scheme.

Missing from the decal sheet are markings for a Belgian machine, but these should be easy to put together. A color drawing of a BH.21 licence built by SABA appears in L+K #1 1974 (along with color drawings of all of the above aircraft). The camouflage scheme consists of khaki-green upper surfaces and silver lower surfaces, with the panels around the motor in natural metal. The entire vertical fin is painted in the national colors (black, yellow, and red from the front), and the national roundel is carried in the four wing positions. The fuselage markings consist of a large "T-17" in white.)

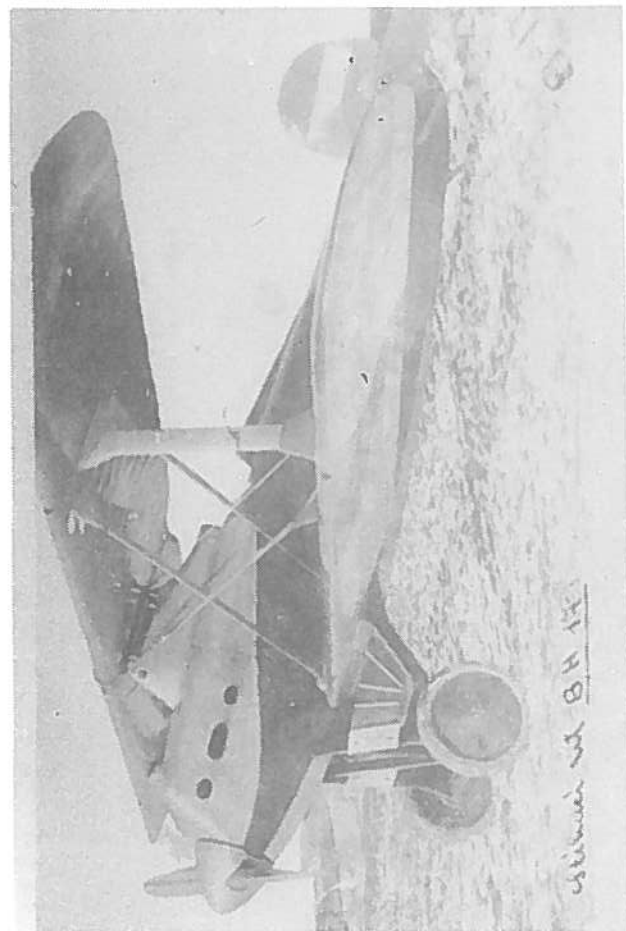
PHOTOS (via Zdenek Cizinsky SAFCH #97)

1. Avia BH.17, the immediate predecessor of the BH.21.

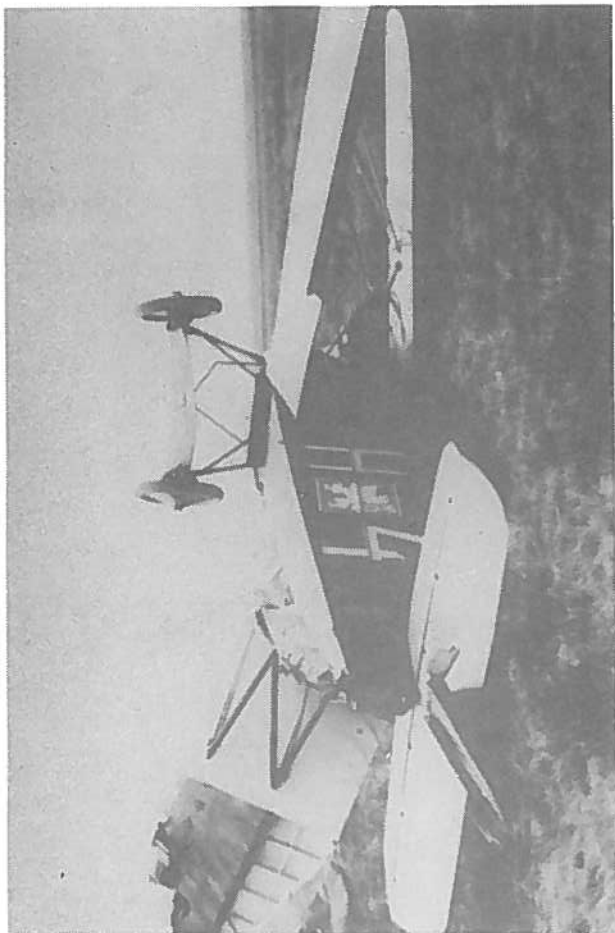
2. Avia BH.21 "H 4" of the 1st Air Regiment, Prague, in a very embarrassing position.

3. Avia BH.22.1 with "flag"-type national insignia and the white rectangle denoting a training aircraft.

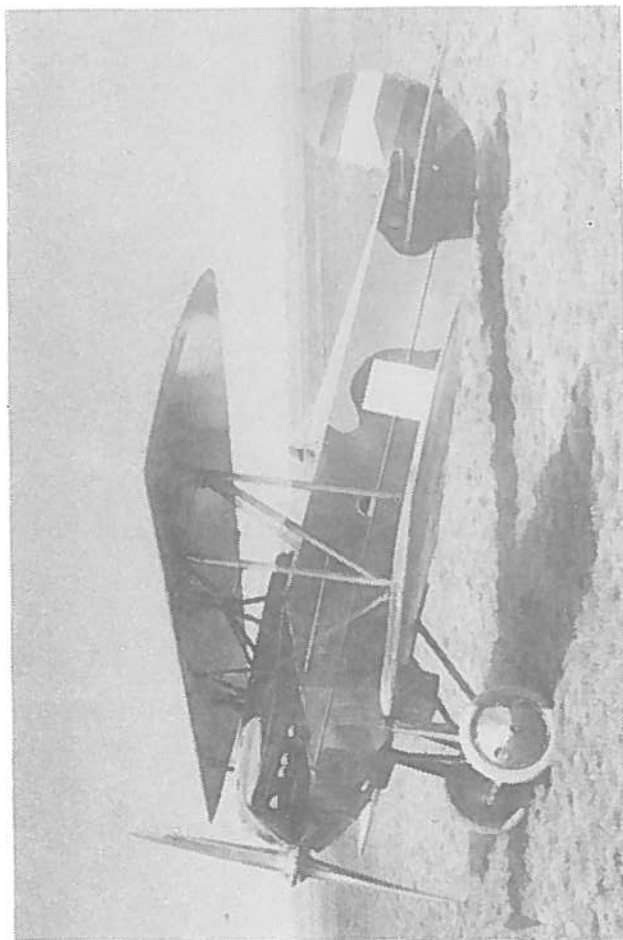
4. A line-up of Avia fighters. From the right: a BH.21, next a BH.33, and finally three BH.33L.



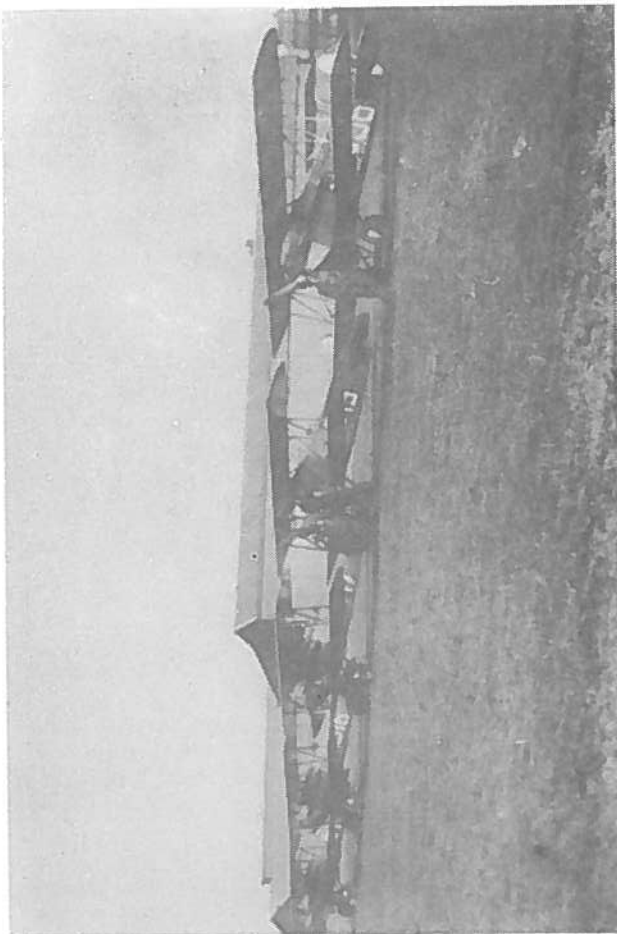
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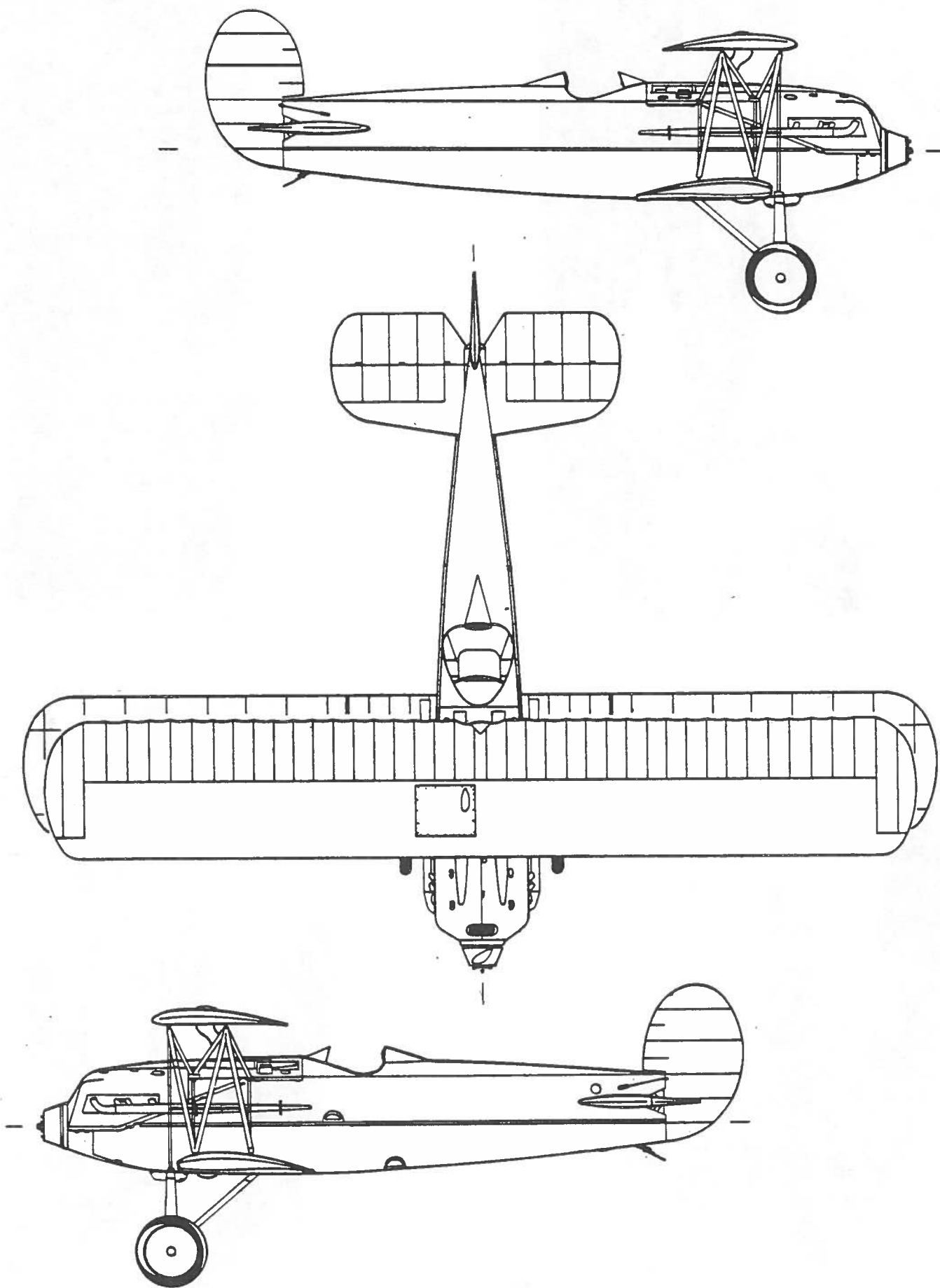
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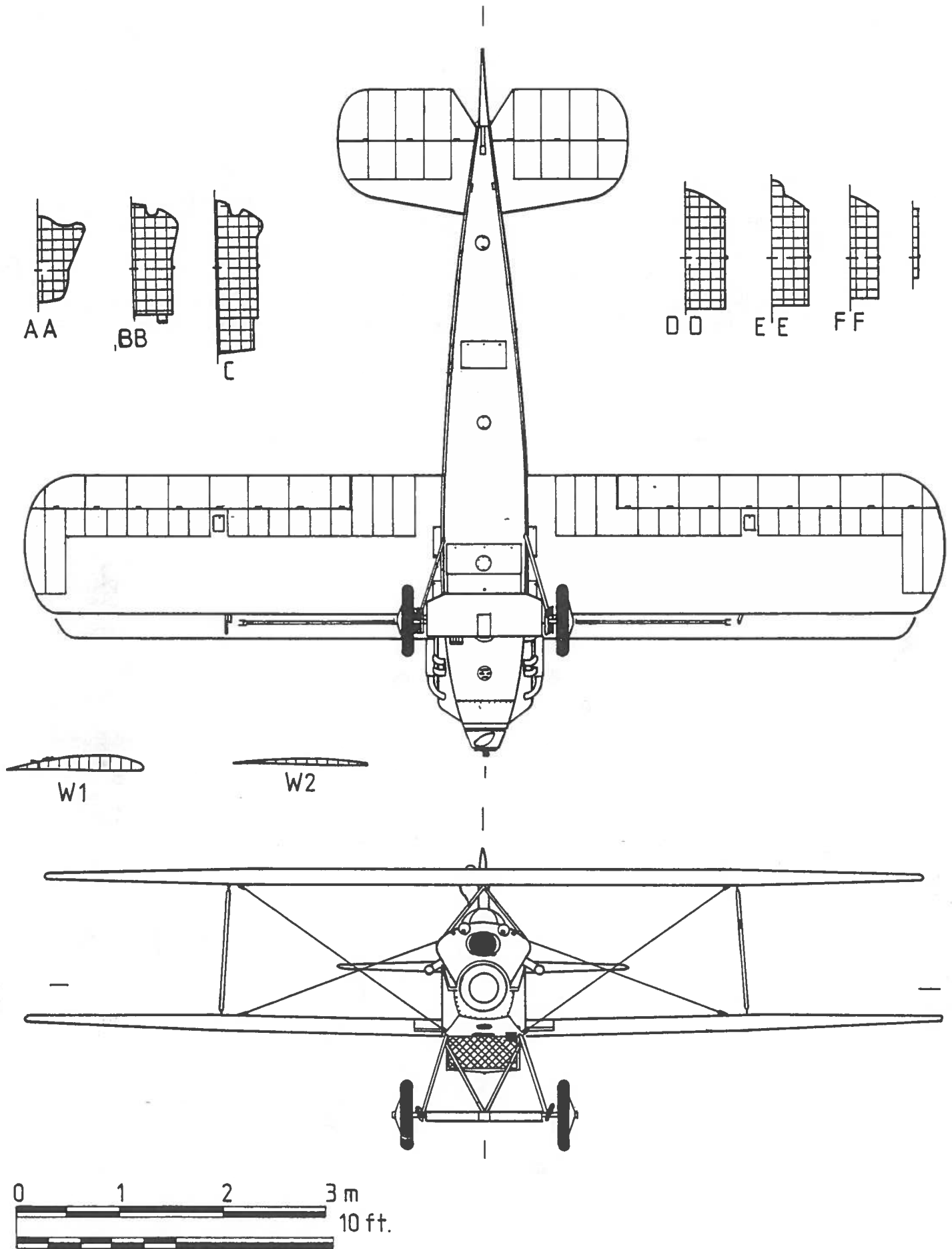


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BELGIAN FIGHTER UNITS OF THE 1920'S

(Editor's note: This article is based on a letter sent to Colin Owers (SAFCH #261) to Guy Roberty (SAFCH #528) in response to Colin's request for information on the color schemes and squadron markings carried by Belgium Nieuport 29 and Avia BH-21. It is an excellent example of how much aviation history can be unearthed by a study of aircraft markings.)

The decade following the end of WWI is the least known period in the history of Belgian Military Aviation (which became the Belgian Air Force in 1946). The activities of WWI and developments after 1930 are much better recorded, and one can only assume this lack of information was caused by the public's distaste for anything military immediately following WWI. This article is an attempt to summarize what is known about this neglected period of Belgian military aviation.

Several reorganizations and changes in unit numbers characterized this period. For example, a Nieuport with the Thistle insignia could, in less than five years, have been associated with three different squadrons. I have attempted a tabulation of these changes, but it became so complicated that I've come to the conclusion that the easiest way to describe things is to follow the units by following insignia and traditions.

At the beginning of WWI, the Belgian Military Aviation did not have any units specifically designated as fighter units. Only in 1915 were a few fighters, mostly Nieuport X used as single seaters, assigned to the reconnaissance and artillery-spotting squadrons. Fighter activities developed through the acquisition of various types of Nieuports and the Hanriot HD-1, and gradually the 1st and 5th Squadrons became purely fighter units (combat was the term used at the time). In September 1918, a combat group, called Groupe Jacquet (after the name of its commanding officer) was created with three squadrons: 9th (ex 1st) with HD-1, 10th (ex 5th) with SPAD VII, and 11th (a new squadron) with Sopwith Camels.

After the Armistice and a short stay in Germany for 10th Squadron, all fighter units were gathered together at Schaffen (near the town of Diest) under II Group and reduced to two squadrons, 9th and 10th. (11th Squadron was disbanded only to reappear in 1920 as a bomber unit with DH-4.) In 1918, 9th Squadron selected the Thistle as its official insignia, 10 Squadron selected the Comet, and 11th Squadron the Cocotte. Equipment in the early 1920's was a collection of HD-1, Camel, and Fokker D-VII (See SAFO #23). These were soon supplemented with a number of SPAD XIII acquired from French post-war surplus.

On 1/3/1920, the "Aeronautique Militaire" was officially created as the 'fifth arm', still under Army control, but on the same level as the classical 'four arms': infantry, cavalry, artillery, and genie (sappers).

To standardize equipment, an order was placed in 1920 for 108 Nieuport 29 C1; twenty to be delivered from France and 88 to be built under licence by the Belgian SABCA factory. These aircraft were allocated numbers N1 to N108. (Some source claim slightly different numbers.) Delivery from France began in 1922, while SABCA production continued from 1924 to 1926.

The progressive absorption of this new equipment brought about another organizational change: II Group at Schaffen became IV Group, 9th and 10th Squadrons being renumbered 2nd and 3rd Squadrons respectively. At this time, both squadrons were at least partially equipped with Nieuport 29.

A new unit, V Group, was created at Schaffen in the summer of 1923, with two squadrons (later identified as 5th and 6th Squadrons) initially operating the older aircraft discarded by IV Group. These two new squadrons adopted the Cocotte badge of the now disbanded 11th Squadron. V Group transferred to Nivelles, the designated second fighter base, and was progressively reequipped with Nieuport 29.

In 1924, all operational units were grouped under one Air Brigade divided into three Groupments (renamed Regiments in 1926): one for reconnaissance, one for bombardment, and one for fighters. This latter organization, 2nd Groupment (later 2nd Regiment) commanded I Group (ex IV Group) based at Schaffen and II Group (ex V Group) based at Nivelles. I Group consisted of two squadrons: 1st (ex 3rd) and 3rd (ex 2nd). II Group also contained two squadrons: 5th and 7th Squadrons (ex 6th).

Squadrons and regiments (groupments) were identified by arabic numbers, while groups were identified by Roman numerals. For example, the 3rd Squadron of I Group of the 2nd Regiment was identified as 3/I/2Ae (Ae for Aero-nautique Militaire).

Sometime in 1926, after a fighter competition, an order was signed for 44 Avia BH-21; five to be delivered directly from Czechoslovakia while the remaining 39 were to be built in Belgium under licence (34 by SABCA and 5 under sub-contract by SEGAs). These aircraft were numbered T1 to T44. The BH-21 began to arrive at 1/I/2Ae and 3/I/2Ae at Schaffen starting in 1927. 5/II/2Ae and 7/II/2Ae at Nivelles had to wait until 1928 to receive their BH-21.

At this same time, the bombardment/reconnaissance and observation regiments were receiving their first Breguet XIX (also built by SABCA) whose speed and manoeuvrability match those of both the Nieuport 29 and Avia BH-21! This situation brought about a review of future plans and a change in leadership for the Aeronautique Militaire. After a prolonged fighter competition, the Fairey Firefly was selected and by 1931 most, if not all, fighter squadrons were equipped with this new type (built in Belgium by Avions Fairey in Gosselies near Charleroi).

MARKINGS

1. GENERAL: The WWI aircraft arrived in the colours of their country of origin. Some individual colour schemes were allowed as well as personal and squadron insignia. The Fokker D VII retained its lozenge camouflage for some months (years?) after the war.

In the 1920's, some uniformity was decreed and all aircraft were painted overall khaki; some witnesses of the period say darkish brown, others say darkish green. Roundels, in the national colours (black, yellow and red) and with diameter nearly equal to the chord of the wings, were carried on the upper surfaces of the top wing and on the under surfaces of the lower wing. The rudder, and sometimes also the fin, displayed the national colours in vertical stripes. Roundels were not applied to the fuselage. The individual aircraft code was painted on the under surface of the lower wing, the letter underneath the starboard wing and the number (one, two, or sometimes three digits) under the port wing. These numbers were painted in white to show against the khaki colour. The aircraft type and individual number were marked over the rudder stripes; These markings were mostly in black, but sometimes in white. (White may have been used only on aircraft built outside of Belgium, but I have not been able to verify this.) At a later stage, the following rudder markings became standard:

PT (total weight)
PU (useful load)
ESS (total fuel quantity)
HUI (total oil quantity)

Variations soon appeared, and many photographs show aircraft of various types with a lighter shade on the lower surfaces of the wings, fuselage, and tailplane. On these aircraft the codes were in black. It is believed that these aircraft had received only an undercoat of silver paint, and that the under surfaces were left unpainted either to save time or because of a shortage of khaki paint.

By the time the BH-21 entered service, it seems that the silver undersides with black codes were officially adopted.

Because of a spate of unauthorized low flying incidents in the middle or later 1920's, the authorities ordered the painting of the individual aircraft number (not the letter, only the digits) on the side of the fuselage as big as possible. These numbers, as well as the squadron insignia, were applied at the squadron level and thus did not appear on a aircraft before delivery to an operational unit. It is assumed (and this is guesswork, not established fact) that aircraft allocated to group and squadron commanders did not carry numbers on the fuselage side.

A totally different scheme (all silver with black top decking) was introduced in the early 1930's, and, after the Munich crisis, a scheme consisting of khaki and silver with altered roundel positions was adopted; but this is outside the scope of the present article.

2. SQUADRON AND INDIVIDUAL INSIGNIA: In 1918 the three squadrons of Group Jacquet each adopted a squadron insignia: the 9th took the Thistle, the 10th the Comet, and the 11th the Cocotte. These three insignia were, until the late 1930's, the only officially recognized ones for fighter units. (In the late 1930's two new squadron insignia appeared, both were eagles, one red the other blue. These insignia appeared only on Fairey Fox two-seat fighters.)

THISTLE: The Scottish Thistle (in French - Chardon d'Ecosse) was the personal marking of S/Lt de Meulemeester, and first appeared on his Hanriot HD-1 of the 1st Squadron in 1917. When 1st Squadron, which was composed of the best Belgian fighter pilots of the time, became 9th Squadron of Groupe Jacquet in 1918, de Meulemeester's personal badge was adopted as the official squadron insignia. As described earlier, the post-war period saw 9th 10th Squadron based at Schaffen under II Group and equipped with HD-1 and Fokker D VII, latter to be supplemented with SPAD XIII. 9th Squadron received its Nieuport 29 from July 1922, and became 2nd Squadron of IV Group (which became I Group in 1924). In the 1926 reorganization, the squadron became 3/I/2Ae. The Avia BH-21 arrived in 1927, and the squadron reverted to 2/I/2Ae in 1929. In 1931, it reequipped with Fairey Firefly, and in 1939 it was the only squadron with Hurricane Mk.1, but still displaying the Thistle on the fuselage.

de Meulemeester's motto was "Nemo me impune lacessit", which roughly translated, means "Who provokes me gets hurt". Since de Meulemeester was an intellectual with a very cynical sense of humour, some think that the motto was addressed to his superiors as well as to his foes. Although personal and later squadron insignia were painted on aircraft, they were also produced as small metal badges to be worn on the right breast pocket of the uniform. Although the motto may have appeared on some aircraft, it was mainly used on the uniform badge, generally written on the circle which served as background for the insignia.

NB: Another well-known insignia is the Holly Leaf (Feuille de Houx), a reconnaissance squadron badge, painted on Ansaldo 300 in the 1920's. Although different, it can be confused with the Thistle by the casual observer.

COMET (in French - la Comete): Sometimes referred to as a shooting star, this was the personal insignia of Maurice "Teddy" Franchomme while he served with 5th Squadron. This squadron was mainly equipped with Farman aircraft, but since Franchomme was flying a Nieuport X as escort, the Comet first appeared on this type of aircraft, followed by a Nieuport XI in 1916 and a SPAD VII in 1917. When 5th Squadron became 10th Squadron of Groupe Jacquet in 1918, it kept the Comet as its official insignia and had it painted on their new SPAD VII. 1919 found this squadron a part of the occupation forces in Germany, where it was reequipped with Fokker D VII. The squadron soon returned to Schaffen, where, as part of II Group (renumbered IV Group in 1920), it became 3rd Squadron. They were the first squadron to receive the Nieu-

port 29 in June 1922, using aircraft delivered directly from France. 10th Squadron was renumbered 1st Squadron in 1924 when IV Group became I Group. In the 1926 reorganization, it became 1/I/2Ae and began to receive its Avia BH-21. These, in turn, were replaced by Fairey Firefly in 1931. Sometime in 1937 they reequipped with Gloster Gladiator, and it was on these aircraft that they fought in the 1940 campaign. The motto associated with the Comet is "Ut flugur suca aethera" or "As the lightning travels the skies".

COCOTTE (In English - paper horse; although it looks much more like a paper bird): The white Cocotte was the personal insignia of Willy Coppens (later Chevalier Willy Coppens de Houthuist), the leading Belgian ace in WWI, flying Nieuport XI and later HD-1 with 1st Squadron. When this squadron became 9th Squadron of Groupe Jacquet and adopted de Meulemeester's Thistle as its official insignia, the newly created 11th Squadron asked Willy for permission to adopt his Cocotte for their Sopwith Camels. Permission was immediately granted. Disbanded soon after the Armistice, a new 11th Squadron was created in 1920, but this time as a bomber unit (with DH-4) it could not use the Cocotte insignia which was reserved for a fighter squadron.

In July 1923, when a new fighter group, V Group, was created at Schaffen, its two squadrons, later identified as 5th and 6th Squadrons, were equipped with HD-1 and SPAD XIII discarded by IV Group. This new group took up the Cocotte insignia and traditions. In the second half of 1923, this group moved to Nivelles, was redesignated as II Group and began to receive Nieuport 29. In June 1925, a new squadron (7th) was completely equipped with new SABCA-built Nieuport 29, while the 6th Squadron was disbanded.

In 1928, 5/II/2Ae and 7/II/2Ae were progressively reequipped with Avia BH-21, which were in turn replaced by Fairey Firefly from 1932. In April 1940, one month before the German invasion, the group was entirely reequipped with Fiat CR-42 sporting either a white or a red Cocotte (to differentiate the two squadrons). The group commander's aircraft carried two Cocottes, one white and one red.

In the 1920's and 1930's, because this insignia was used by two squadrons sharing the same airfield, there were several variations of the Cocotte. One squadron, most probably 5th, kept the original white Cocotte, while the other (first 6th, later 7th) probably started with a white Cocotte on a coloured background (later, definitely, the Cocotte itself changed colours, most probably red, as on the Fiat CR-42, but maybe black on earlier aircraft). Some photographs show a white Cocotte on a two-tone chessboard (black & white or red & white). This could have been reserved for group or squadron commanders, or an attempt to differentiate between the two squadrons.

Willy Coppens' motto associated with the original WWI insignia was "Boutez en avant" ("Push forward"). After WW II, when the Cocotte (by then red, blue, or green) was taken over by the 7th Fighter Wing, the motto simply became "Get in".

PENGUIN: This maybe the most well-known Belgian insignia. It has been the badge of the flying school from 1920 to the present time. After WWI, training was on a varied collection of aircraft, each pupil progressively going to a more complicated aircraft. Initially, there was no fixed syllabus, and a typical progression was Caudron GIII, Avro 504K, Morane Parasol, DH-9, and Fokker D VII. It was only in the middle 1920's that the acquisition of proper training aircraft allowed for application of the Gosport method of instruction. Even so, it was normal for retired operational aircraft to be given to the school for advanced training. Some Nieuport 29 so terminated their useful lives. However, I have no evidence that the Avia BH-21 ever served at the flying school, despite their relatively short operational life. It could be that, by then, there were sufficient specialized advanced trainers, or that the BH-21 was not considered suitable for such a role.

BULLDOG: Very little is known about this badge. I have seen this insignia only on a HD-1, circa 1924. Colonel Terlinden tells me that the C.O. of 5th Squadron (created in 1923 at Schaffien and moved to Nivelles soon after) owned a bulldog which became the squadron mascot. Some pilots wanted to adopt the bulldog as their insignia and one HD-1, most probably the squadron commander's aircraft, was so decorated. However, the Cocotte, because of its WWI traditions, was finally adopted as the official insignia. It is certain that the bulldog never was an official insignia; it was carried on only a couple Nieuport 29 and not for a very long time. Such initiatives were very much disapproved of by the higher authorities.

3. **GENERAL COMMENTS:** The Ni 29 was, I think, well liked. Not so the BH-21 which had the tendency to catch fire while performing aerobatics. The procurement of the BH-21 was criticized at the time, although only passing references can be found. The impression is still that all interested parties knew about this, but nothing (to my limited knowledge) was ever put into writing, at least for public consumption. There were many crashes in the 1920's, involving all types of aircraft, and this led to a change of leadership and policies around 1930.

There is some photographic evidence of aircraft without roundels on the upper surfaces of the top wing. Officially, roundels were to be carried on all four wing positions. However, when repairs were made at group level, some aircraft may have been flown before the final touches were applied. Only when major repairs or a complete overhaul was made at the Etablissements d'Aeronautique or by a civilian factory, was the aircraft delivered

to operational units in a regulation livery. Squadron badges were the duty of the squadron, left to the artist of the day, which explains the variation in insignia and the fact that not all aircraft were so decorated.

Guy Roberty (SAFCH #528), c/o Sabena, 13 Birger Jarlgatan, S-111 45 Stockholm, SWEDEN

Editor's note: An article on the Avia BH-21 by Colin Owers appears in AVIATION NEWS 16-29 July 1982. For those not familiar with AN, it is a 16 page fortnightly with newspaper-size pages costing 50p each issue. While mainly devoted to the current aviation scene, there are frequent articles on historical subjects and their WAR-PAINT series covers aircraft from all time periods and includes some of the finest 1/72-scale aircraft plans available. For example, Colin's article has one full page of text and photos and 2 pages of drawings. The drawings consist of 6 full views (top, bottom, port, starboard, front, & back), a top view sans top wing, 2 scrap views of the ski attachment, fuselage cross sections, cockpit panel and propeller details. Markings and camouflage information are provided by 2-view (top & bottom) of three a/c (Czech a/c with flag insignia, Czech a/c with roundel, and a Belgian a/c), and 14 side-view drawings (10 Czech a/c and 4 Belgian a/c). In addition, there are 5 drawings of unit insignia. Any plan published in AN is available for 70p as back issue or 90p as photocopy. For information on the plans available or subscription to AN, write AVIATION NEWS, 226 High St., Berkhamsted, Herts. HP4 1AD ENGLAND

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"Suomen Lennokki has produced two new decal sheets (both in 1/72 scale and 11 cm by 23 cm in size): Sheet #34 includes 116 Finnish AF roundels of the type used since 1 April 1945. These can be used in conjunction with sheet #35 and also for Blenheim I/IV, Uraken 35BS/CS/FS/XS, and MiG-21F/UTI/UM/bis. Sheet #35 includes serials, numbers, and squadron badges for the following types: Douglas C-47/C-53, Fokker F27 Friendship, Iljushin Il-28, Fouga Magister, BAe Hawk, DH Vampire FB52, DHC-2 Beaver, MiG-15UTI, Folland Gnat F.1, BN Islander, Piper Cherokee Arrow, and SAAB Safir. Squadron badges are the 'lymx' of HavLv 31 for Magister, MiG-15UTI, and MiG-21 variants; the 'eagle' of HavLa 21 for Arrow and Magister; and the 'duck' of IlmaSK for Safir and Magister. This badge will probably be used on the BAe Hawks. Price is 12FIM (about \$2.20) each.

"The FAF purchased two Fokker Friendships from KAR-AIR in May 1982. They are coded FF-1 (c/n 10274) and FF-2 (c/n 10300) and have been on lease since August 1980. The FAF has also ordered a Friendship from Fokker; according to Ben Marselis (SAFCH #143) this will be c/n 10650. It seems that the Friendships will replace the Dakotas, and that more of them will be ordered.

"The Il-28s were wfu during 1981. The three Gates Learjet 35 which will replace them (serials LJ-1/3) are scheduled to arrive between September and November 1982.

"It now seems more and more likely that the total number of MiG-21bis delivered was 30 (serials MG-111/140). MG-139 was destroyed in a crash 11 June 1982 at Kiuruvesi; the pilot (Lt. Haikonen) died. Two more MiG-21UM were purchased during the summer of 1981. One is serialised MK-143, and the serial of the other is unknown. The MiG-21UTI trainers are now wfu; these were serialised MK-103/104.

"Between October 1981 and March 1982, the FAF received three Mil Mi-8 helicopters for SAR duties (serials HS-11/13). HS-12 ditched into the sea near Turku 13 April 1982; one of the crew died. This machine will be replaced; most likely with another Mi-8. Note that these 'sea' Mi-8s have their own serial series; the 'land' Mi-8s are HS-1/6. They also have a different camouflage: the 'sea' machines are light grey, while the 'land' machines are dark green overall.

"More on helicopters: Hughes 500C, HH-1, was damaged

during a training accident in October 1982 and may be wfs. The Mi-4s, HR-1/3, have been stored since 1979, and HR-2 recently went to the Aviation Museum of Central Finland at Tikkakoski. Jet Ranger, HB-1, is now OH-HRJ and belongs to the Border Guard.

The SAAB Safirs have been replaced by Valmet Vinkas. Three Safirs went to the Border Guard, and 14 were sold at auction in October 1982. Two of these went to Sweden.

"Delivery of the Valmet-assembled BAe Hawks is ahead of schedule, and some Fouga Magisters are already wfs (in addition to the 20 that crashed between 1959 and 1977)."

Martti Kuivalainen (SAFCH #282), Pohjolankatu 36A1, SF-96200 Rovaniemi, FINLAND

FROM FINLAND. Tietoteos Aviation Books: Brewster B-239, Dornier 17Z & Junkers 88, Fokker D.XXI, Morane-Saulnier MS 406 & Caudron 714, Curtiss Hawk & P-40, Misserschmitt 109, Soviet Fighters, Fiat G.50, Finnish Air Force 1918-38, Finnish Air Force 1939-72 \$12.00 each; Finnish Fighter Aces \$15.00; Red Stars in the Sky #1 & #2 \$7.50 each; Luftwaffe in Finland 1041-44 #1 & #2 \$14.00 each. Suomen Lennokki 1/72-Scale Decals: 1. Roundels 39-44, 1b. Roundels 41, 2. Roundels 44- \$1.20 each; 6. 5 fighters \$1.35; 16. DU-17Z, 17. Brewster \$3.00 each; 21. Roundels 39-44 80-100 cm, 22. Roundels 39-44 10-80 cm \$3.60 each; 23. Pe-2, 24. Me 109G, 25. SB.2, 26. Hurricane, 29. Curtiss 75A, 30. MS 406 & 410, #3.00 each; 32. Roundels 44-. 33. Roundels 44- \$3.00 each; 34. Roundels 44-, 35. Serial numbers \$3.60 each.

All prices include postage and can be ordered from Borje Hielm (SAFCH #17), Bergsidean 4, 02160 Westend, FINLAND. These items can also be obtained directly from the SAFCH at a 20% discount (plus postage), but must be bulk ordered so you would have to wait until enough orders were received to make an bulk order possible.

"All Swiss Air Force recce Venons are being retired by the end of 1982. The last three active recce Venons are J-1642, J-1643, & J-1648. All other Venons will be retired when they come up for their 500 flight-hour check; they should be all gone by 1984." Michael Grunenfelder (SAFCH #627), Dufourstrasse 19, CH-9008 St. Gallen, SWITZERLAND

dehavilland moth

MANCHURIA, CHINA, JAPAN, NETHERLANDS EAST INDIES, AND INDONESIA

Part One of this article appeared in SAFO #22 and covered Australian and New Zealand aircraft. All of the illustrations in that article were drawn from photographs listed in the bibliography.

Most of the illustrations in this, the second part of the series, were taken from the notes and sketches of Ray Sweet. Unless otherwise noted, the information came from Ray's article, "Mighty Moth", which appeared in Dirty Plastic, the magazine of IPMS Phoenix, Summer 1980. Ray's ten and a half pages of drawings of DH.60s of all variants and nationalities were based on several decades of notes, clippings, photos, and sketches done in the field. In many cases, details are not as clear as one might wish (split axle or straight axle, for example), but when compared with photos (when photos exist) the sketches are very accurate. Without photos in hand, it is not possible to guarantee the details of any given sketch; however, Ray's work should be taken at a very high level of trust. Our sincere thanks to him for permission to use his material in preparation of this article.

In Part One, we asked that anyone with additional information, corrections, and/or comments make use of the side-view plans which were included. These covered the DH.60 Cirrus Moth, DH.60G Gipsy Moth, DH.60M Metal Moth, and the DH.60G-III Moth Major. In Part Two, we include another page of plans. They include the DH.60T Trainer Moth, DH.60 Cirrus Moth with floats, DH.60G Gipsy Moth with floats, upper wings with and without slats, and lower wing under surface detail.

CHINA

The first Moths to see service in China went to Manchuria sometime between 1928 and 1931; at least 25 DH.60Gs being delivered before the fall of Manchuria in 1931-32 to the Japanese. Until then, Manchuria maintained the largest and most modern (at least by Chinese standards) independent air arm in China. The Moths were obtained for use as trainers for the air force and for a secondary role with the state-owned Manchurian Air Lines.

With the Japanese takeover, Manchuria became Manchukuo, an independent country with a Japanese-controlled puppet government and military. The air force was disbanded until 1938 and a paramilitary air arm was established disguised as an airline. Manchu Kokuyuso Kabushiki Kaisha (MKKK) or Manchurian Air Transport Company, operated the surviving Moths throughout the war.

After the fall of Manchuria to the Japanese, the Nationalist Chinese Government obtained hundreds of aircraft types including an unknown number of DH.60 Moths of all variants. These were used in the training role, as communications aircraft, and for transport throughout China. An unknown number were captured by the Japanese over the years and were placed into service by them in various roles.

ILLUSTRATIONS

M1: DH.60G, MKKK civil registration M18, military-style markings typical of MKKK aircraft. Dark blue overall, white tail and forward section of rudder. Rudder colors are dark blue over red with white 12-point star highlighted in blue. Moth insignia on forward fuselage. Wing color scheme is conjectural; if the wings were dark blue, the roundel was probably outlined in white as shown. This would not be the case if wings were white, which is a distinct possibility.

C1: DH.60T Trainer Moth in delivery markings, Shanghai, 1931. Natural metal and silver doped overall. Rudder stripes light blue and white, wing roundels in four positions in same colors. Note wide inner ring of blue. Black identification number appears on the sides of the fuselage, beneath the lower wings, and in small numbers at the base of the tail. Small white Chinese character above number on tail.

C2: DH.60G in standard Chinese trainer scheme, 1944. Dark olive drab over doped silver. Wing struts olive drab, undercarriage struts silver. Identification number stencilled in white on fuselage, black beneath lower wings. Standard national markings, broad inner ring on roundels at this late date is questionable.

C3: DH.60G as captured by Japanese in Manchuria, 1933. Dark olive drab overall. Roundels in four wing positions, fuselage sides, and rudder are of more traditional style.

JAPAN

Japan obtained at least one DH.60X Cirrus Moth in the early 1930s. An unknown number were also captured in China during the war. Others were obtained from the Dutch and possibly other Allied forces during the Japanese advances early in WWII.

ILLUSTRATIONS

J1: DH.60X Cirrus Moth, modified engine panels, shortened exhaust pipe, oversized wheels. Silver doped and natural metal overall. Silver wing struts, black cabane struts. Hinomarus in six positions. Word MOTH in small black letters on forward fuselage where Moth insignia was usually placed. Traces of insignia remain.

J2: DH.60G captured in Manchuria, 1933. Had been Chinese trainer, used by Japanese as unarmed reconnaissance plane. Upper surfaces JAAF A1 green, under surfaces JAAF A10 light blue grey. All struts dark green. Hinomarus in four wing positions, fuselage sides, rudder. Aircraft number 26 in white on fuselage, in black beneath lower wings.

J3: DH.60G-III, JAAF training school, Manchukuo, 1943, probably captured Chinese aircraft. JAAF A1 dark green upper surfaces, silver doped under surfaces. Dark green wing struts, silver undercarriage struts. Hinomarus in four wing positions, fuselage sides. Tail and rudder with white unit insignia.

NETHERLANDS EAST INDIES - INDONESIA

Most of the civilian aircraft operating the Netherlands East Indies at the outbreak of WWII were impressed into military service as trainers and communications aircraft. Several DH.60 Moths were included in the general impressment, some of which survived to be captured by the Japanese. At least one survived Japanese service to join the fledgling Indonesian Air Force in 1945-46.

ILLUSTRATIONS

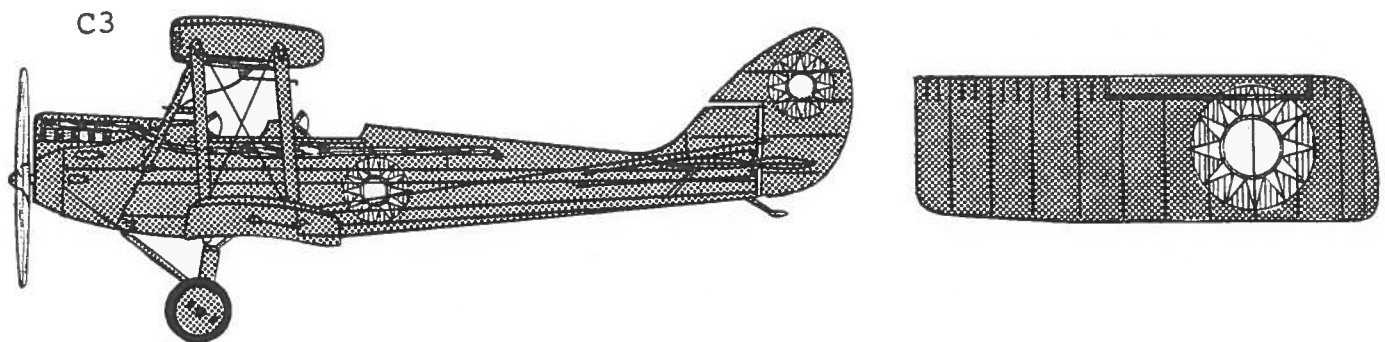
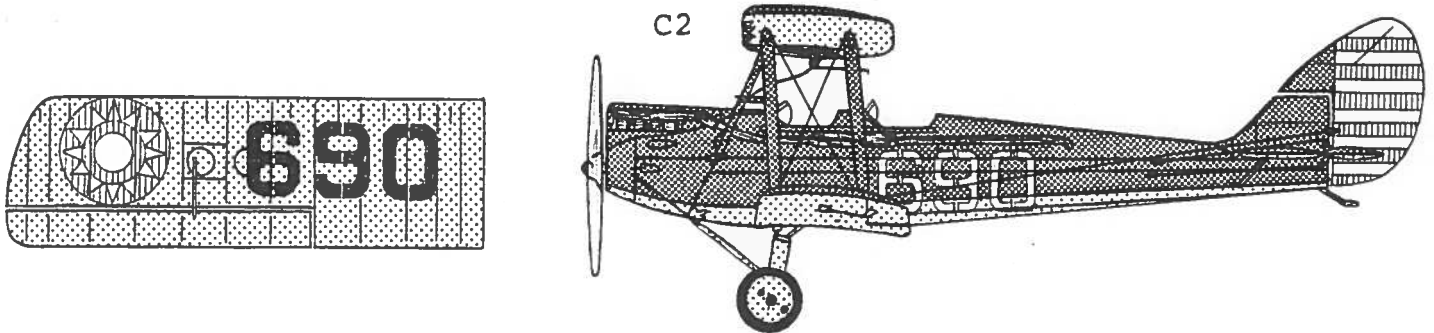
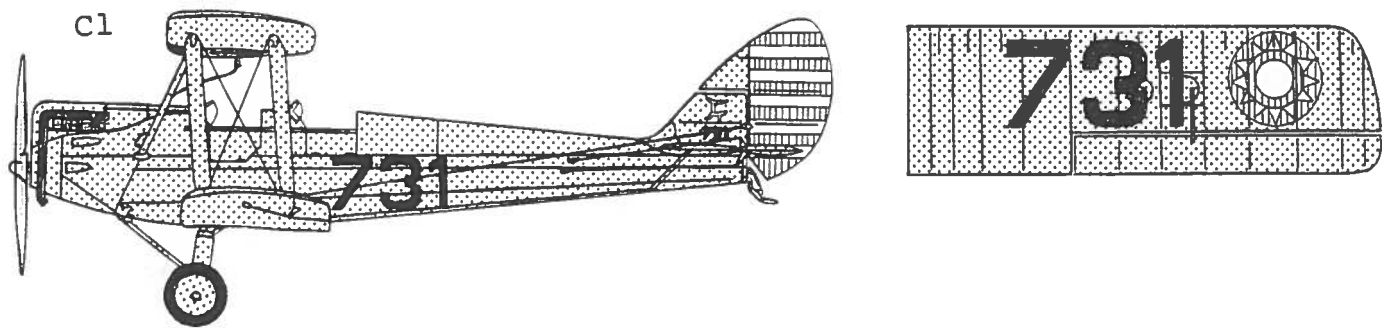
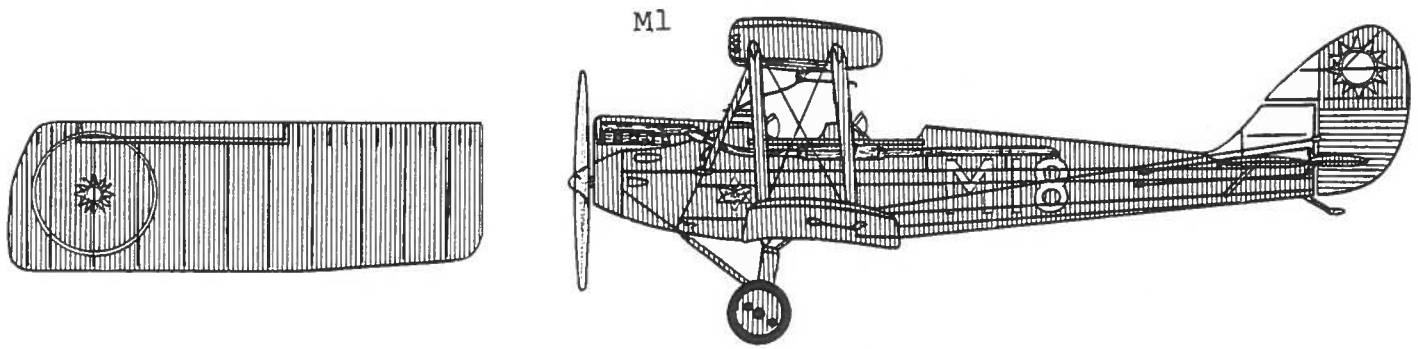
NI: DH.60G-III Moth Major, impressed into Netherlands East Indies AF service, 1941. Natural metal and silver doped overall. Dutch insignia consisting of black outlined orange triangle in four wing positions and fuselage sides. Rudder is orange with black outline. Black identification number D010 on fuselage.

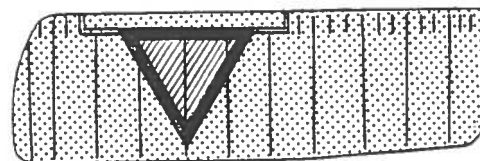
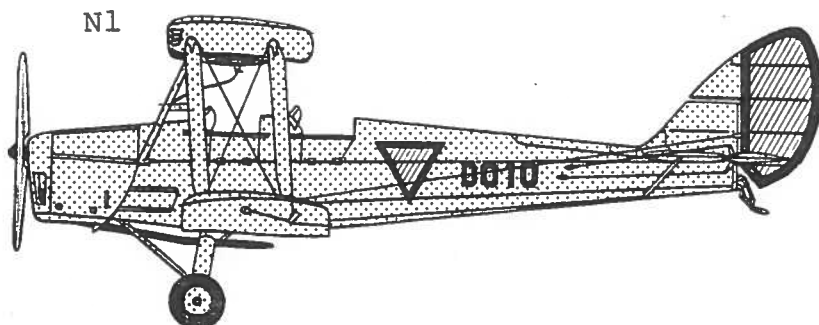
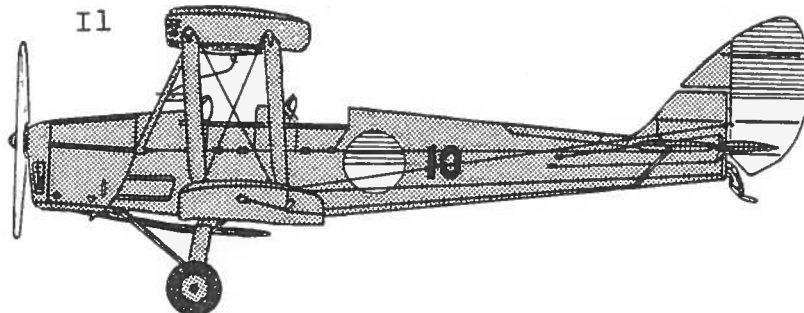
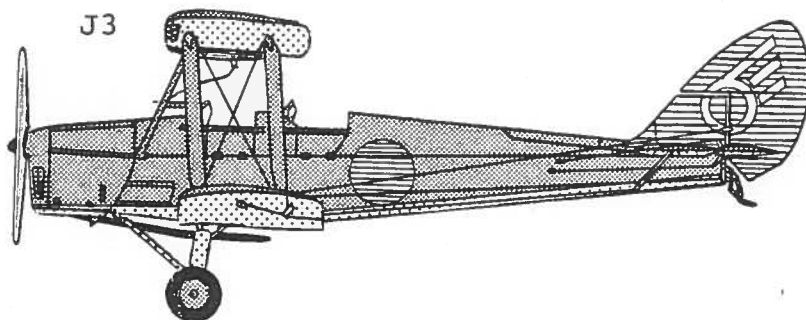
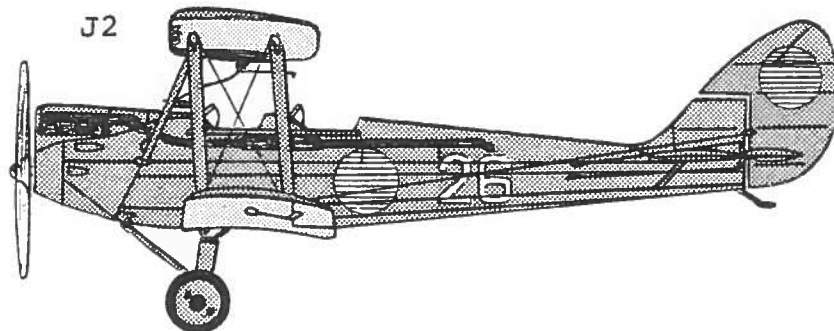
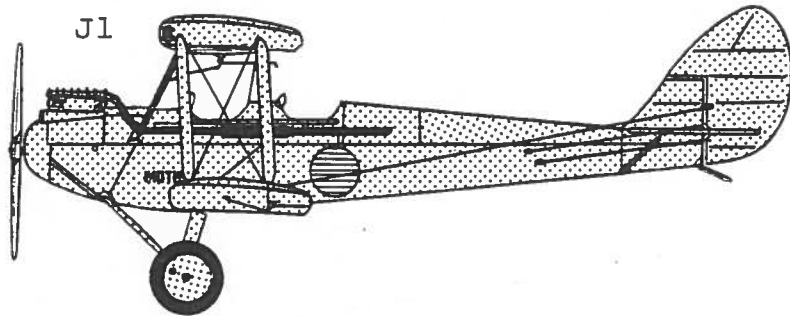
I1: DH.60G-III Moth Major, Indonesian Air Force, 1948. Color scheme is probably JAAF A1 dark green overall. Red/white Indonesian roundels in four wing positions, fuselage sides. Rudder colors are red over white. Black number 10 on fuselage side would indicate that this might be the same aircraft shown above in Dutch service.

REFERENCES

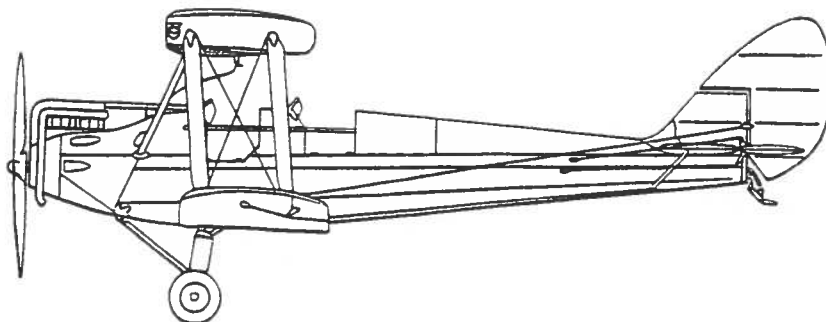
1. Dirty Plastic, Fall 1977. Drawings of C3 and J2.
2. Dirty Plastic, Summer 1980. Drawings of C1, C2, J2, J3, N1, and I1.
3. Small Air Forces Observer #10, July 1980. Historical and marking information on Manchurian aircraft.
4. Small Air Forces Observer #22, Jan. 1982. Drawing of M1.
5. Encyclopedia of Japanese Aircraft, Vol. 6, Imported Aircraft, by Tadashi Nozawa. Photos of J1.

Tom Young (SAFCH #56), PO Box 159, Olema, CA 94950

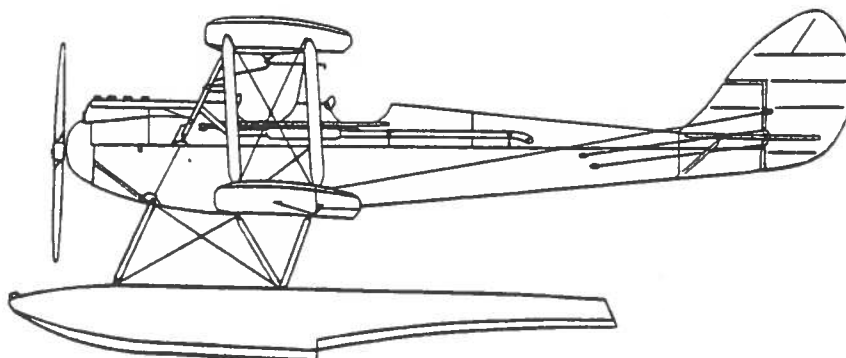




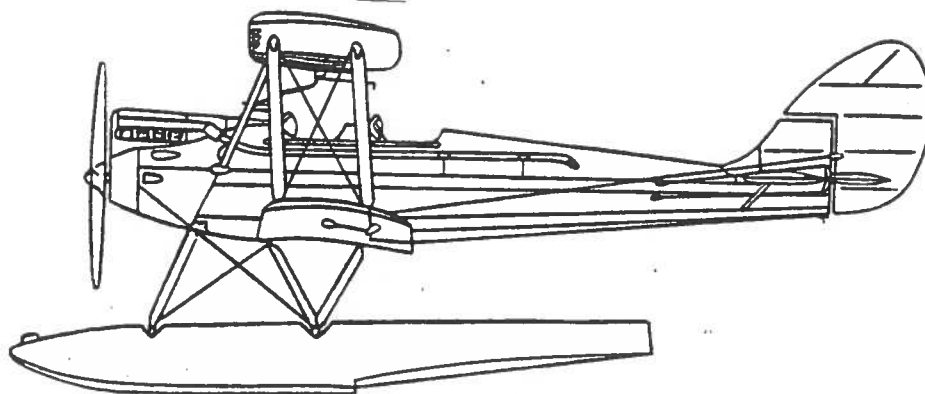
D.H.60T GIPSY MOTH



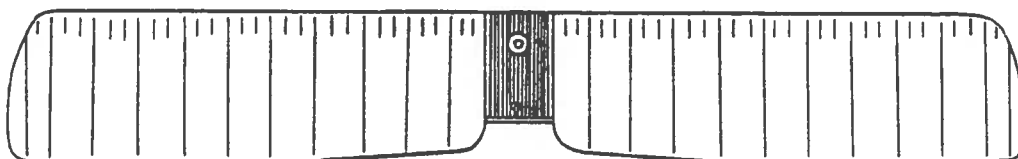
D.H.60 CIRRUS MOTH
(FLOATS)



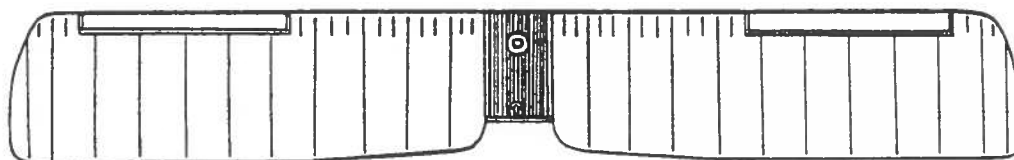
D.H.60G GIPSY MOTH
(FLOATS)



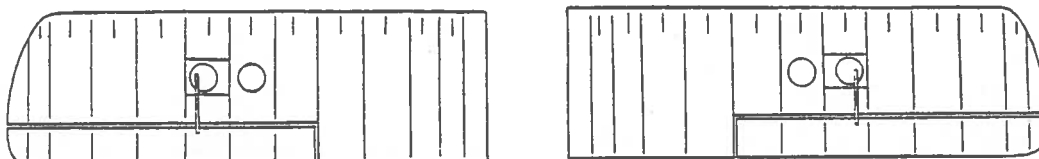
UPPER WING
(NO SLATS)



UPPER WING
(SLATS)



LOWER WING



LATIN AMERICAN MILITARY AVIATION, by John M. Andrade, (Midland Counties Publications). Softbound, 285 pages, 21 cm by 15 cm, 229 photos (16 in color). £ 7.95.

This eagerly awaited addition to the excellent series on Military Air Arms by Midland Counties Publications is every bit as good as we have come to expect from this publisher. Twenty-eight Central American, Caribbean, and South American countries are covered with text, maps, drawings of insignia, tables, and photos. The amount of coverage varies from 41 pages for Brazil to one-half page each for Barados and Bermuda.

Typical coverage of a medium-sized airforce is represented by Columbia. This begins with a map of the continent locating the country, followed by a detailed history of military aviation in the country. For example, we find that 3 Wild WT biplane trainer were obtained from Switzerland in 1925 and four Wild X observation aircraft (serialized 43 to 46) were in service in 1929. Then follows a list of "current organization", drawings for 2 squadron insignia, and a map of the country locating 16 military air bases. A small section on "colours and markings" gives the history of the national insignia illustrating its current form, and discusses the color schemes currently in use. The largest section consists of a 5 page "aircraft review" where each type of aircraft in service since WWII is listed giving a brief service history with serial and construction numbers when known. Coverage of aircraft types vary greatly; e.g., the complete Vultee BT-15A listing is "Fourteen were delivered and withdrawn from use in 1951" while the Douglas C-54 Skymaster section lists 16 aircraft with their serial numbers, subtypes, construction number, previous identity, and ultimate fate. Included are 10 b&w photos: T-34A, C-45, C-54 (2 a/c), Mirage 5, DHC-2, C-47 (3 a/c), & C-130. Other photos appear in the special photo sections [F-28, HS 748, & T-33A (color)]. A minor irritation is that there is no mention in the "country" section of what additional photos are to be found in the "special photo" section. Since there are so many photos in this book, it is easy to miss a useful photo on a given use of the book.

Typical coverage for a small air force is represented by Trinidad and Tobago. This has the usual map locating the country and a one-column history covering aircraft used, serial numbers, and colors of the national markings. A real gem is a color photo of a Cessna 337A (TTDF-1) in the markings of the Trinidad and Tobago Defence Force.

All branches of military service employing aircraft are discussed. For example, the section on Venezuela covers the aircraft used by the Air Force (13 photos) Army (1 photo) National Guard (1 photo), National Police, Navy (4 photos), and Air Escuela de Aviacion Civil (1 photo).

Any book attempting to cover this subject matter to such depth will, of course, contain possible errors. For example, in the section on the Dominican Republic it is remarked that "nine (Vampires) are believed to be in service". An exchange of letters with Mr. O'Leary, whose excellent article on his visit with the Dominican Air Force appeared in a recent issue of AIR PROGRESS, resulted in the comments "As far as the Dominican Vampires: I saw three, one preserved in front of the main base and two derelict on the base. The remaining aircraft, including the rare Mk.1s, were burned about a year ago. I should add 'apparently' because nothing is ever 100% sure in that part of the world. However, they are certainly not operating Vampires."

Technically the book is superb; the black-and-white photos are well produced, particularly those of full-page size, but they remain clear and informative even when put six to a page. The color photos are a treat for the eye, with vivid and true colors. Deserving particular mention are the all-red Peruvian Mi-8 and the camouflaged Bolivian IAI Arava.

For those not familiar with the format of Midland Counties' Military Air Arms series, it is useful to outline what this book does, and does not, contain. Con-

cerned mainly with the current status of the military air arms, all the photos are of aircraft in the current inventory, national and unit insignia are drawn in their present form, and the organization tables are as up to date as possible. However, the "aircraft review" sections cover all aircraft in service since WW II, and the "history" sections begin with the foundation of the service. One can not expect these histories to be complete since such a treatment would require a separate book for each country (at least for those who have had air arms for any considerable length of time). However, these histories are much more complete than those found in many modern treatments, such as AIR FORCES OF THE WORLD by Hewish, et al (1979), and, at the risk of committing heresy, I would venture that they are even more complete than found in the revered THE AIR FORCES OF THE WORLD by Green and Fricker (1958).

For a better idea of the depth of coverage found in this book, see the in-depth report by Dan Hagedorn which follows this review.

In summary, 'Latin American Military Aircraft' is an outstanding book that can be enthusiastically recommended to all SAFO readers regardless of their specific areas of interest.

This book can be obtained either directly from the publisher (Midland Counties Publications, 24 The Hollow, Earl Shilton, Leicester, LE9 7NA, UK), or from Jim Haycraft (Air Enterprises Books), PO Box 7745, Newark, DE 19711, or from David Veres (Vanguard Hobbies), 340 Amabell St., Pittsburgh, PA 15211. Both of the latter are SAFCH members and offer discounts to SAFCH members.

"One of the latest issues from the very efficient Midland Counties Publications is John M. Andrade's 'Latin American Military Aviation', a 288-page volume which has been awaited by SAFO readers. I have recently completed a thorough examination of this work and I can recommend it as a very competent summation of all the known data and the best all-round study of the subject so far published. However, I must report that it falls somewhat short of an overall coverage of its subject, and, while there is a wealth of detail between the covers, very little of it adds to the existing store of knowledge.

"With all of that said, my chief criticism is that some rather serious errors have been committed to print, and, in such an otherwise good volume, these gain authority and will soon become widely held truths. My examination of this book has filled two complete tablets with what I think are errors in fact or premise, the omissions I've yet to calculate. Rather than attempt a rehash of all of these, a sampling from the section dealing with Argentina will illustrate the types of errors I have noted.

"Page 12: Exactly what is a 'Caudron 80' (perhaps a Caudron G.III with 80 hp engine)? The statement that the Escuela de Aviacion Militar evolved into the Grupo de Aviacion I in 1922 might be called into question, and I know of no support for Argentina receiving any Nieport-Delage NiD.29C.1 fighters. The production of Bristol F.2B Fighters seems more likely to have been 10 machines rather than the 40 recorded. Likewise, the premise that 100 Avro 504Rs were produced seems rather wide of the mark. A total of 33 seems more likely, and the question of subtype remains open; I favor the 504K as opposed to 504R. The 'first seven D.21 to be delivered (AC-1 to AC-7)' were in fact Naval aircraft and were probably D.25C.1s at that. The totals of FMA-built aircraft are, in some cases, suspect. Ae.C-1, for instance, was probably built through at least 14 aircraft, 10 of which were on strength with the Army aviation on 28 November 1935. It would seem that 15 Ae.MB.2s were built, serials running 201-215. All survivors were later 'reserialized' with the '0' (for observation) prefix. It is possible that the Ae.MB.1 may be the 15th machine, brought up to MB.2 standard.

"Page 13: There is also contention over the total of

Ae.MO.1s built. 41 seems likely, rather than 12. Air Order of Battle for 1 July 1936 bears this out, showing a total of 39 on strength. Other FMA aircraft types built in the 1930s are not mentioned, i.e., Ae.ME.1, T.1, C.3 and C.4. The Junkers K-43/W-34 rundown isn't quite right: s/n's 101 & 102 were F.13ge's, 103-104 were K-43/W34's (one a transport and one an ambulance, and so designated in Junkers papers, c/n's 2721-2722) followed by the five K-43s proper s/n 105-109 (c/n 2723-2727). At least one of these remained on 15 August 1952! While 190 Focke-Wulf Fw-44J's may have been produced, the total is probably closer to 170 (the largest number to show up on any FAA strength roster was 95 on 1 August 1944). Only 87 were on strength at 27 August 1941. The Navy also operated the type. The book shows the total of 25 Martin 139 WAAs delivered. However, including the demonstrator (NR15553) only 24 were acquired by the Army (B-501 to B-524). Of these, B-523 and B-524 are unsubstantiated and may not have been taken up for one reason or another. Thus the total of Army Model 139s may have been only 22. This is borne-out by strength data, that for 5 March 1937 showing 22. At no time was any number larger than this reported. The 'older civil aircraft' reported taken on charge, including Fokker Universal T-201, Consolidated 17 Fleetster T-202 and Douglas Dolphin T-203, were in fact all Naval aircraft and never served with Army aviation!

"Page 14: The Supermarine Spitfire H.F.IX that went to Argentina was not for a military customer; avid modelers who went scrambling for appropriate kits in anticipation of a color scheme should relax.

"Moving along to 'Aircraft Review': Bell UH-1H s/n H-16 is shown as c/n 11885. H-16 was (upon delivery) c/n 11387, ex69-15099. Perhaps c/n 11885, which was delivered to the FAA on 18 August 1970, was a replacement and as such was also serialized H-16. Continuing on the subject of Bell helicopters, FAA Bell 212s were c/n's 30830-30831, 30834, 30836-30840 and were delivered between 27 April and 9 June 1978. Bristol 170's: T-31 has been reported not allocated for some reason. Thus the identities of c/n 12751-12752 are in doubt. This is complicated by the fact that TC-330 is also given as c/n 12754 exT-33. T-36 is actually c/n 12760 and T-35 is c/n 12764. No mention is made of Cessna types used such as Model 210, 320, and 411. Argentine deHaviland Dove's are a study unto themselves for there were also others, including T-65, T-91, S-4, and F-14 (which is also reported as c/n 04156). This holds for Douglas DC-3/C-47s as well. T-15 also appeared as T-15-S, T-19 was also TC-19, T-22 also TC-22, and so on. Continuing on Douglas transports, there was also a C-54 T-40 (c/n 10402, C-54A-15-DC ex42-72297 which became TC-40 later). TC-48 was w/o 3 November 1965. T-44 and TC-44 were actually two different aircraft, as T-44 was w/o at El Palomar 27 July 1947 while TC-44 was reported derelict at Buenos Aires 21 March 1969. Thus the total of FAA C-54s is either 9 or 10, rather than 8. The first batch of 25 Douglas A4P Skyhawks actually commenced delivery in March 1967; the second batch in October/November 1969-April 1970. Were the Fiat trainers C-46-2B's or -5B's? Others reported include E-411, E-418, E-424, Ea-404, Ea-406, Ea-410, and E-470. The FAA received at least 42 of these aircraft. Fokker F-27s: TC-79 (1) and TC-80(1) were F-27-200's, and were initially T-41 and T-42. It seems that the Albatross' delivered to the FAA were SA-16A's and not HU-16B's. Other known FAA T-28A s/n's include E-640, 650 and 652. Sikorsky S-55s/UH-19As: Apparently a combination of commercially acquired and MAP-delivered aircraft were taken up. I doubt that s/n's were ever H-01 as opposed to H-1, etc. since H-1 was exported as such. The final three were deactivated by the FAA in March 1969. Of the FAA Sud Caravelles, at least two, T-91 and T-93, were later re-serialized as TC-91 and TC-93. Vickers Vikings: c/n 184 given as T-184 was T-9(2) prior to T-84 (not T-184). Another used by the FAA was T-29 c/n 239 (a series 610) exG-AJBM and LV-???. Other points of contention include T-76 c/n 185 xLV-KEZ, LV-AEV & T-85. T-77 is also given as c/n 191 exLV-XFH, LV-AFF. 'T-185' was actually T-85. T-86 was c/n 200 exLV-XFL, LV-AFU and probably became T-88. T-91 crashed at El Palomar 20

October 1956 and I have a photo of a mystery aircraft, T-94, in full markings.

"Moving on to Army aviation, of the Bell UH-1Hs, only 15 exUS s/n's and c/n's have been positively identified. Further, the book makes no mention of Army use of Beech AT-11, Beech 55 Baron, Cessna 210, Hiller 12E, Pilatus Turbo-Porter, Piper L-4, and (possibly) Macchi MB-308.

"The section dealing with the very interesting Gendarmeria Nacional aviation should probably have included some mention of Bolkow Bo-105s.

"Naval aviation, another fascinating subject and, to my way of thinking, the best (by performance) aviation organization in Latin America, could be a life time study in itself. I find that my notes for this arm are rather tedious, so I will only skim over them. Twelve rather than 14 Avro 552 trainers seems a more likely total and I doubt that the s/n's assigned to the four Vickers Viking amphibians (R-3 to R-6) had anything to do with the civil registration sequences, even though a superficial resemblance to the system then in use exists! And once and for all (please!) the Argentine Navy did not use any Grumman F6F-5 Hellcats! The total of Navy Boeing-Stearman Model 75s (PT-13, PT-17, N2S-) acquired was 60 rather than 23, and the Argentine Navy did not acquire any Chance-Vought OS2U-3 Kingfishers. The total of Navy Beech Model 18s was 20: one D-18S and 19 assorted C-45H, UC-45, RC-45Js with many code re-serials. The Catalinas (14) delivered 18 June 1946 were not 'US Navy surplus stocks' but were in fact XRCAF Canso's. Douglas C-47s: More than one (CTA-15 given) flew with the Comando de Transportes Aeronavales, others being CTA-12, 13, 23 and 24. Other serials included 4-T-1. 3-Gt-9, 3-Gt-12, 2-Gt-13, 2-Gt-15, 5-T-26 and 3-Gt-3. The Grumman F9F-2 serial/code tieups are not correct and a total of 28 were delivered. S/n and code tieups for the Nep-tunes (P2V-5s) are not all correct. Code 2-P-144, an SP-2H, was not s/n 0709; rather 0718. Navy aircraft (post-war) not mentioned include Beech AT-11s, Grumman J2F-5s (at least 31).

"I'll forego comments on the Coast Guard section."

"Now for some brief comments on other parts of the book. The Brazilian section is well done, but I feel sure that credit for much of the 'new' data contained therein was incorrectly ascribed, as much of it I recognized as that of Captain Carlos Dufriche, who was not among the credits. Likewise, the section dealing with Chile is deeply indebted to 'Fuerza Aerea de Chile' magazine, and I do not see it credited in the opening pages at all. I'm sure the section dealing with Cuba was a great disappointment to all. In the Ecuadorian section, the myth that the FAE received Seversky P-35's is perpetuated (they did receive some Seversky fighters, but they were not via 'US aid' and they were not P-35s as we know them). Further, one of the most astounding items of misinformation occurs in the Ecuadorian section with the revelation that Ecuador received no less than 46 Ryan STM-series trainers during WWII! The anecdote related on pp177 in which a 'B-26B Invader flown by CIA crews' became FAG 420 stretches the truth of the situation quite a bit, and fails to point out that B-26s were already on strength with the FAG by the time the 'Operacion Puma' forces saw action. The section dealing with Honduras leaves much to be desired, and readers may want to watch for a treatment of this service which will appear in Jay Miller's new magazine AEROFAX. The Panamanian national insignia on pp218 has the stars inverted, and the section on Paraguay repeats the mistaken notion that Paraguay received T-bG's.

"I encourage SAFO readers who are serious students of the subject to add this volume to their reference shelves. But, as Mr. Andrade states in his introduction, I ask them to refrain from treating it as Gospel. In this book, Mr. Andrade has collated the data base so that further research and study can be more easily accomplished. I hope that our fellow enthusiasts will consider it on exactly the that basis."

Daniel P. Hagedorn (SAFCH #394), 290-40-0270, HHC 3d Brigade, APO New York 09074

OPERATION PUMA, The Air Battle of the Bay of Pigs, by Ferrer. (International Aviation Consultants). Soft bound, 245 pages, 13 cm by 21 cm, 101 photos, 5 maps. \$11.50.

In the early hours of 15 April 1961, the three B-26 Invaders of "Operation Puma" tookoff from "Happy Valley" (Puerto Cabezas, Nicaragua) to strike at Columbia Air Base west of Havana. This flight, with two others (Gorilla and Linda), eight B-26 in all, were assigned the task of destroying Castro's air force on the ground in preparation for the landing of anti-Communist forces at Giron on the south coast of Cuba. These attacks were successful; over half of the Communist air force was destroyed leaving only two T-33, three Sea Furies, and two B-26 operational, at the loss of only one B-26. Unfortunately, because of incredible bungling by the politicians, this initial success was followed by a series of disasters. Within 72 hours, a; the airmen who participated in Operation Puma would be dead, and in a few days, the Bay of Pigs would become a symbol of the impotence of the Western Democracies to withstand Communist expansion. It is fitting that the story of the air battle of the Bay of Pigs be titled "Operation Puma".

First published in Spanish in 1975, this important book is now available in English. The story is told by one of the participants. Edward Ferrer was a pilot for Cubana when Castro overthrew the Batista regime on New Year's Day 1959. He tells how the initial exhilaration and hopes quickly gave way to fear and persecution. He hijacks his own Cubana DC-3 and flies to Miami where he immediately joins the Liberation Air Force. He is sent first to Kayo Base (Retalhuleu) on the Pacific coast of Guatemala for training. Because of his lack of previous military experience, he is assigned to flying C-46 and C-54 transports and participates in 68 missions dropping supplies to guerrillas operating in Cuba. Then on 2 April 1961, the Liberation Air Force arrives at Happy Valley to begin final preparations for the invasion of Cuba.

Nearly half the book is devoted to the vivid description of combat mission flow in support of the invasion. By cross referencing his own records against memoirs published by Communist pilots who took part in the action, the author is able to put together chillingly intimate accounts of the fratricidal combat above the Bay of Pigs: "Meanwhile, Farias and Gonzalez in Chico One (B-26 '935') were chasing Carrera-Rolas' Sea Fury when they were attacked from behind. A T-33 piloted by Lieutenant Alberto Fernandez opened fire and staggered the B-26." The B-26 crashed on Giron airfield and two photos of the crashed aircraft are included in the book.

No matter how bravely the men in the air and on the ground fought, the battle was to be decided far away. "The events of the next few days would reveal either an inability to grasp the whole situation or total stupidity on the part of the wise strategist, John F. Kennedy, who destroyed in hours the months of hard work and training." Three key decisions by President Kennedy crippled the effectiveness of the Liberation Air Force: (1) he ordered that the initial strike be made by only 8 of the 16 aircraft originally scheduled, (2) he halted all pre-invasion air strikes after the first for 48 hours, and (3) he refused Admiral Arleigh Burke's request to have fighters from the ESSEX provide protection for the bombers. (At the last minute, Kennedy did authorize a single fighter-escort mission of one-hour duration.)

While most of the photos in this book are of men and places, there is some important information for the modeler: "The only difference between our bombers and theirs was that ours had no tail artillery, and the noses of our B-26's were metal while their (sic) were plexiglass. Our aircraft also had blue stripes painted on the wings." In addition, the author and SAFCH member David Veres are putting together a book illustrating the aircraft used by both sides. (See the letter that follows this review.)

Seldom, if ever, has an air war been covered so thoroughly. Admittedly, it was a small air war (only 10 anti-Communist Cuban airmen and four of their American 'advisors' died in combat), but it was a battle of great importance to Cuba, the USA, and the whole world.

This book is highly recommended to all SAFO readers whose interests extend the least bit beyond modeling. Vanguard Hobbies (340 Amabell St., Pittsburgh, PA 15211) is offering this book to SAFCH members for \$10.00 plus postage.

"A friend and I grew tired begging local hobby shops and book stores to order items we wanted. So we took matters into our own hands. The result is Vanguard Hobbies, your Pittsburgh source for print and plastic exotica.

"Going into a basement business has opened the doors to items most shops simply wouldn't, or couldn't, carry. You'll find one of these items enclosed: OPERATION PUMA: THE AIR BATTLE OF THE BAY OF PIGS by Edwardo Ferrer. Please do me a favor. Since the author is a personal friend, I obviously have a vested interest in the commercial success of OPERATION PUMA. Would you review the book for the SAFO? Your review will bring an unbiased assessment to the audience that counts the most: the small air forces enthusiasts.

"OPERATION PUMA retails for \$11.50, but I can offer it to SAFCH member for \$9.00 plus \$1.00 postage. Perhaps that doesn't sound like much of a savings, but it cuts my margin to the bone, and I simply must recover some of my start-up costs. When things get better, I'll offer even better discounts for SAFCH members.

"We carry many imported European and Japanese books. We can offer: Ouest France monographs (from France), Tietoeos monographs and Aviabook publications (from Finland), Midland Counties books (for England), and Kookabura publications (from Australia) to SAFCH members at 20% off retail price. We can also offer Docavia publications (from France) to SAFCH members at 15% off the retail price.

"We also special order books and kits and generally split the profit with our customers. That means that if we buy at 40% of retail, we discount 20%. That enables us to recover a reasonable profit and provide our friends and fellow enthusiasts with rather exotica, hard-to-get books and kits. But, please add postage. We also perform rare kit searches. SAFCH members need only send their requests (SASE, please) and we'll give them our best effort.

"We do this part-time. That means stolen hours from our weekends. So please be patient when ordering from us. We'll get it to you as soon as possible.

"One further note: Edwardo Ferrer and I are collaborating on an article on the Bay of Pigs air war. Fellow SAFCH members with photos of Cuban aircraft (1955-60) can help us out by lending their wares. They'll receive full credit. Right now we have quite a few shots, but need more. So any help you can give will be appreciated."

David Veres (SAFCH #60), 340 Amabell St., Pittsburgh, PA 15211

"IPMS-NYT: the magazine of IPMS-DENMARK. Quarterly since 1977. Thirty A4-size pages per issue. In Danish with English summary. Techniques, reviews, history, and a few photos. Presently not much on Danish AF, but much material on this subject can be found in the 1971-75 back issues. Some back issues are available, please ask. Yearly cost (1982) 60 Dkr (70 Dkr air); 1983 probably 10 Dkr more. If paying in US\$: \$10 (\$12 air). Sample back issue: \$2.00 or 4 IRCs. From Europe and Japan: Giro 2353156, IPMS-DK, Rosenvagngfts Alle 6, II, DK-2100 Copenhagen OE, DENMARK."

Kai Willadsen (SAFCH #516), Kastellet 54/322, DK-2100 Copenhagen Ø, DENMARK.

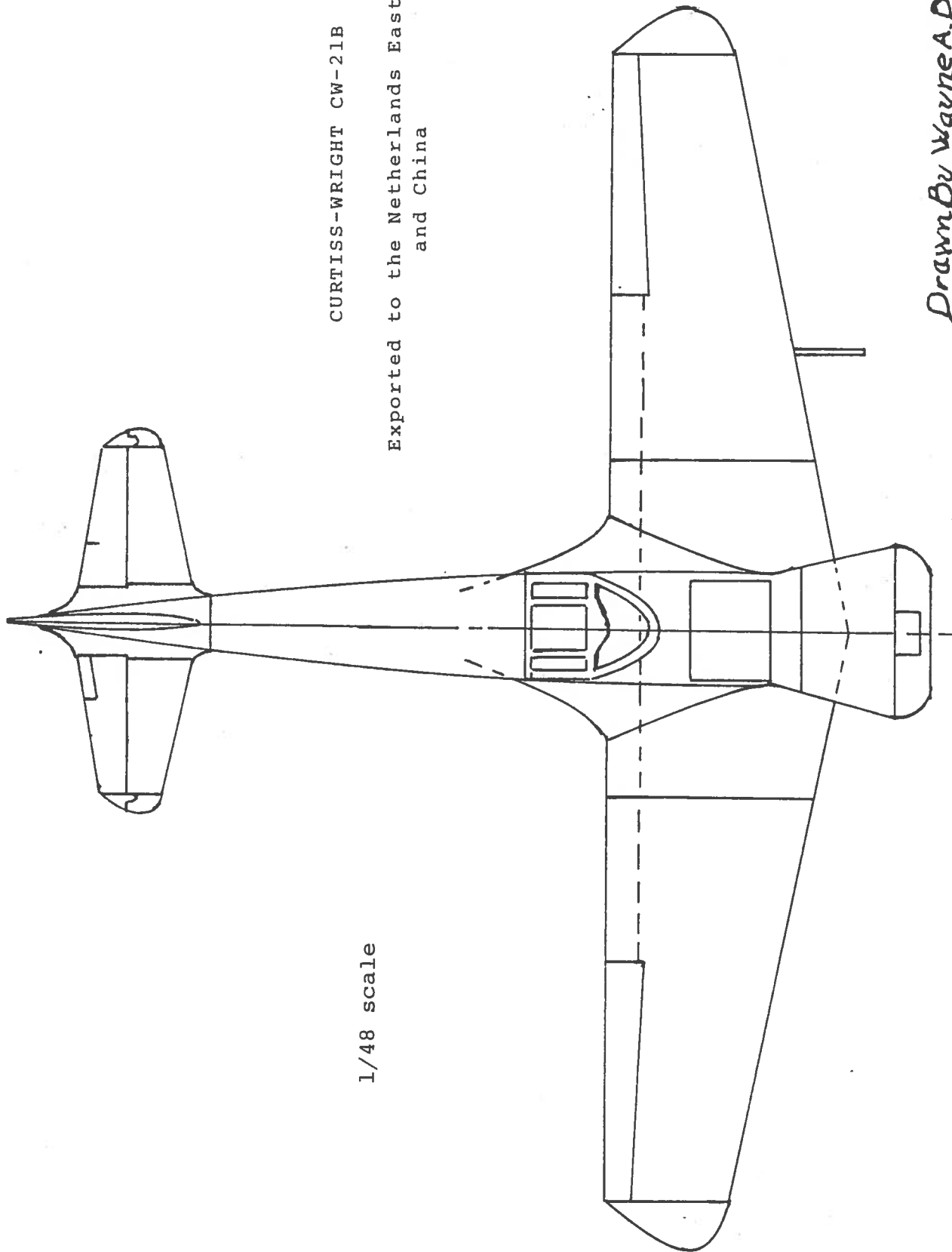
"As editor of KIT (the magazine of IPMS-BELGIUM), I am preparing for publication in KIT an article about the Anglo-French operations at Suez in 1956. Photos (either b&w or color) of the aircraft used by the belligerents during the campaign are needed. I can supply photos of Belgian aircraft in exchange."

Eric G. Hourant (SAFCH #597), 11 rue des Pervenches, 4100 Seraing, BELGIUM

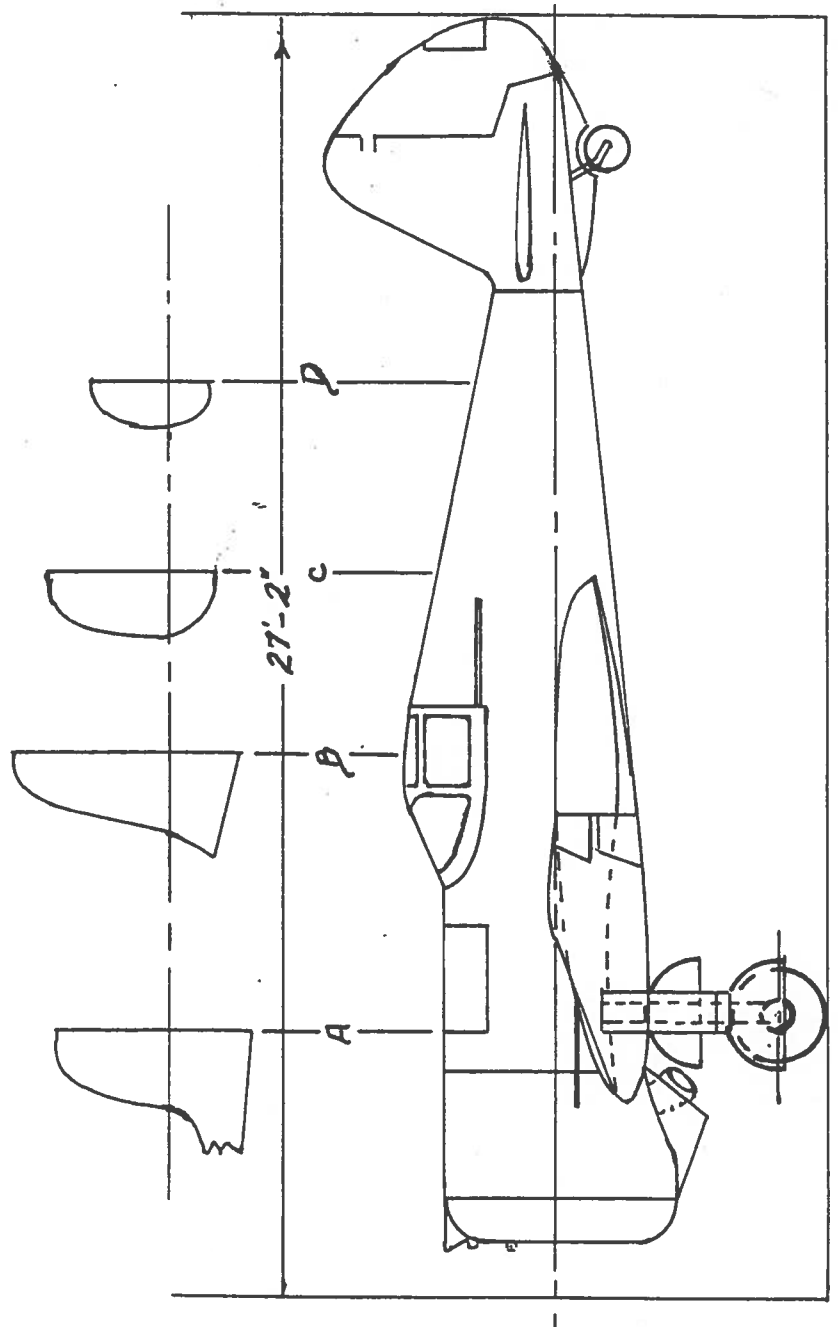
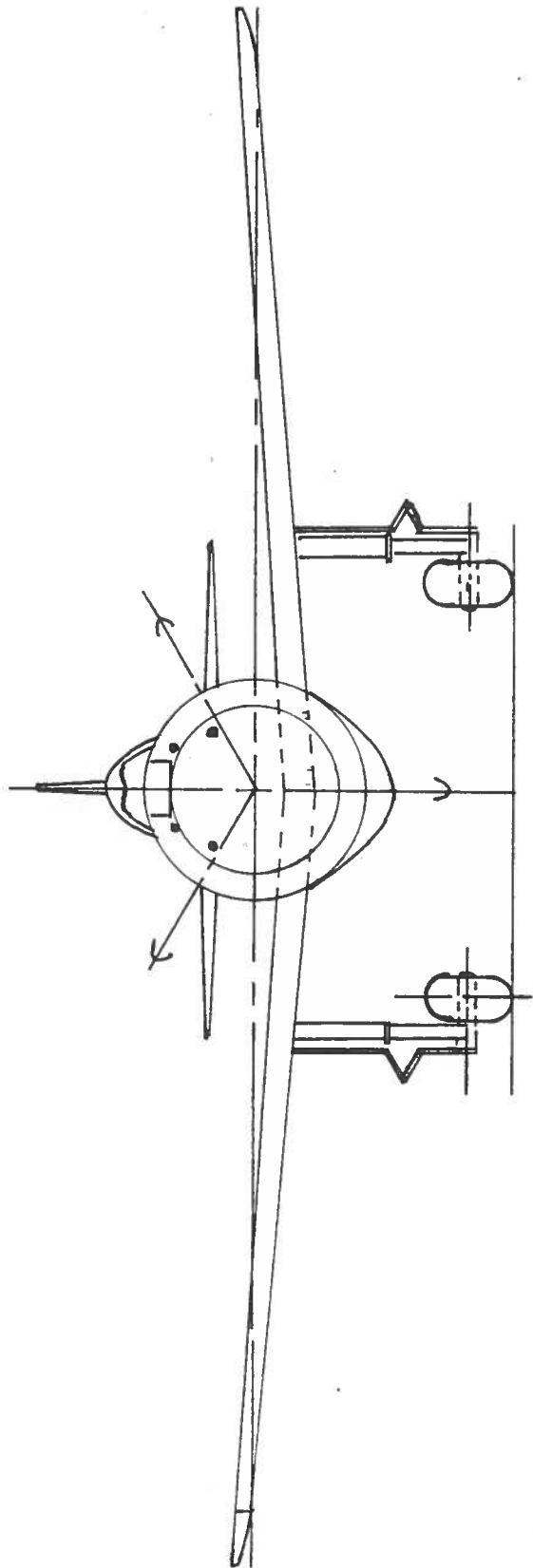
CURTISS-WRIGHT CW-21B

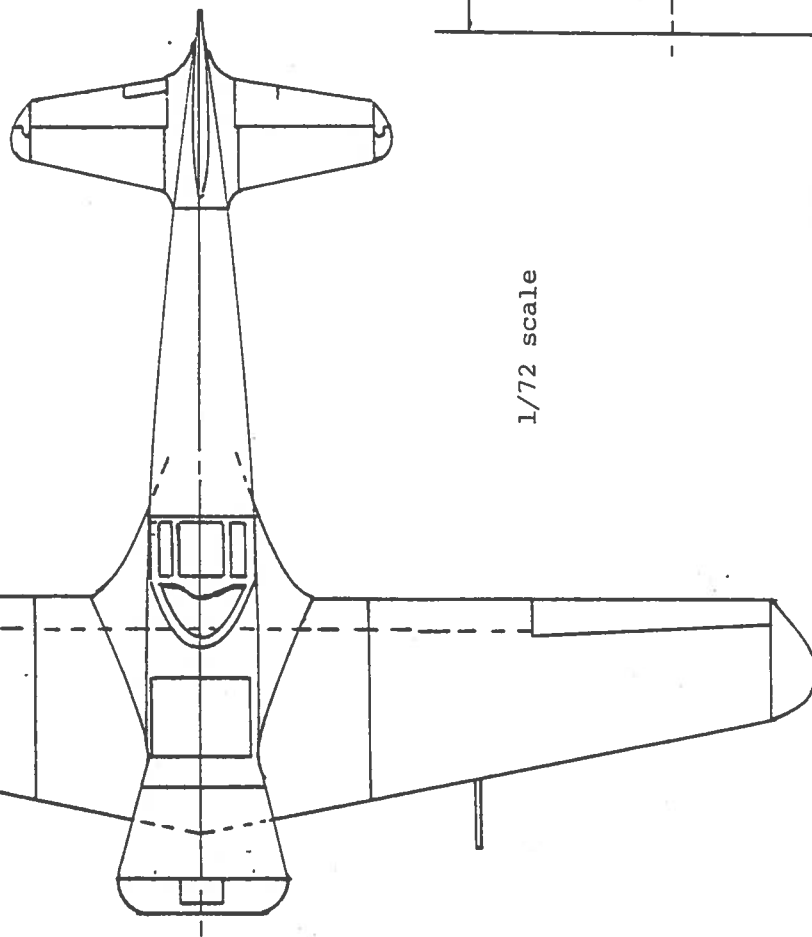
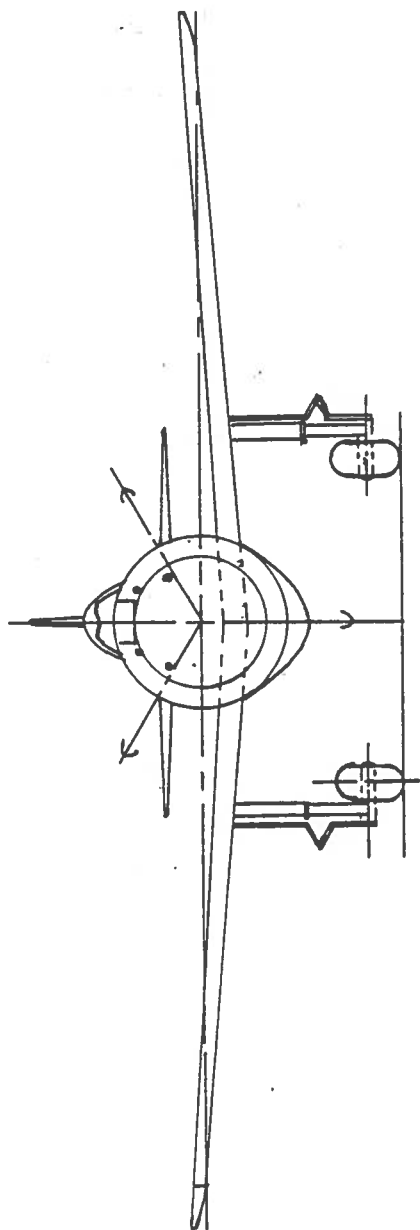
Exported to the Netherlands East Indies
and China

1/48 scale



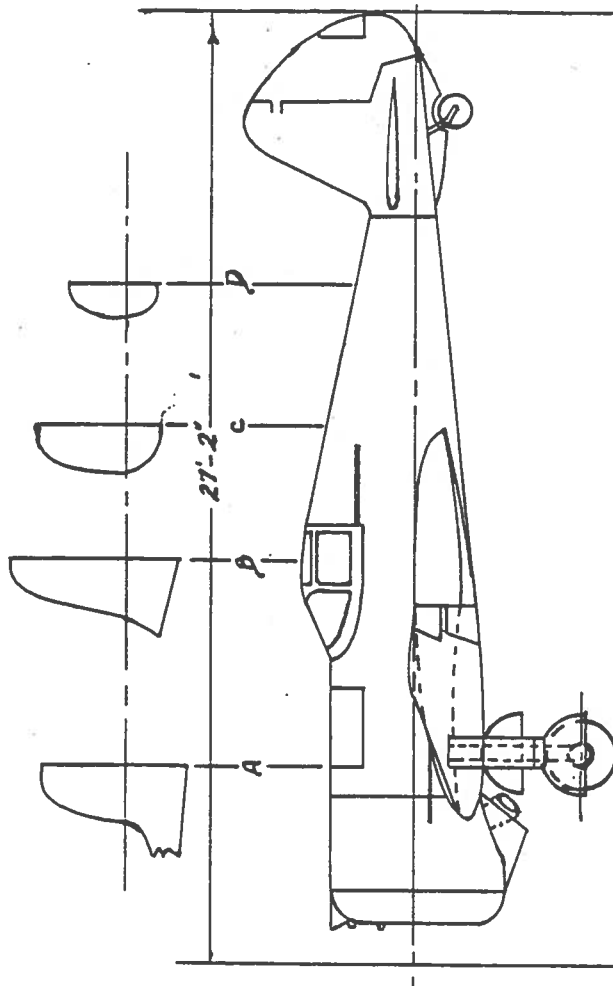
Drawn By Wayne A. Penny





CURTISS-WRIGHT CW-21B
Exported to the Netherlands East Indies
and China

1/72 scale



Drawn By Wayne A. Penny

"After having read the latest two issues of SAFO (#23 & #24) I would like to make some additions and corrections:

"Unfortunately there is a misprint in the review of Coupe 10 'Swedish Reconnaissance Aircraft'; actually there are about 100 photos, most of which have never been published before. Of special interest are the color photos of the Seversky EP-106 in camouflage. Coupe 11, 'Swedish Jet Fights', is now available. It has over 100 photographs, and for the first time, the J29 is shown in color with the special camouflage used in the Congo. Coverage ranges from the J21R to the latest JA37 and this book is a must for anyone interested in Swedish Aviation.

"I read with great interest Colin Owers article on the Hansa Brandenburg monoplanes, and although I agree with what he writes about the WW I period, perhaps I can add something to the information on the post-war period. I agree that Heinkel designed the U1 for Casper. Five were built; two for the US Navy, two for Japan, and one entered the German civil register. The next type from Casper was the S1. The prototype was built in Germany, smuggled out in pieces, and taken to Stockholm. In Stockholm, a former German Naval pilot, the not altogether unknown Clemens Bucker, had started an aeroplane company called Svenska Aero AB, not to be confused with Svenska Aeroplan AB (SAAB), and the re-erection of the Casper S1 took place in their workshop at Hastholmen. On 11 November 1921, the aircraft was transferred to the Swedish Navy, given s/n 31, and referred to as the Hansa Brandenburg Type 31. Test flown for about 11 months, it received at least three different engines during this time and with only 29 flying hours it obviously spent a lot of time on the ground. After a short spell with the Kustflottan (literally Coastal Flotilla), it was issued to the Naval Station at Karlskrona in October 1922. Sometime around February 1927 it was reseried 231. It was w/o on 29 June the same year.

"In his article, Colin says that more S1 were built in Germany and assembled in Sweden. The situation seems to be much more complicated than this:

"1. Casper did build more S1 in Germany. The first was registered D-292 and took part in the ILUG airshow in Gothenburg during August 1923. However, it was sold to the Norwegian Leif Lier, registered N-23, and w/o in Norway. As far as I know, only two more Casper S1 were built in Germany. These aircraft were registered in Germany as D-450 & D-820, and neither seems to have any Swedish connection.

"2. As early as March 1921, the Swedish Navy contracted with Svenska Aero to build ten licence-built Casper S1 to be known as Hansa Brandenburg Type 32. These aircraft received s/n 32-41. All Swedish sources, that I know of, agree that these aircraft were built from scratch in Sweden.

"3. The most interesting part, however, is that Svenska Aero continued to build ten extra Hansa Brandenburg Type 32. They are reported to have been sent to Brazil (checked by Lennart Andersson) or Argentina. As far as I know, no such aircraft appeared in either country. (Can any Latin American reader comment on this?) The interesting part is that ten Heinkel HE-1 did show up on the German civil register as D-938/939/945/1045/1046/1047/1134/1199/1282/1474 (c/n 201-210). It is tempting to assume that the ten Swedish Hansa Brandenburg Type 32 were delivered to Germany where they took up the designation HE1. It is my opinion that Heinkel built no HE1 on his own, but used the designation HE1 for the Type 32 built in Sweden. Remember that Heinkel opened his factory on 1 December 1922 at a time when production of the Type 32 was already in full swing in Sweden. I would like to go further out on the limb and suggest that Svenska Aero built these ten extra Type 32 free for Heinkel and in return they did not have to pay any royalty for the first ten that went to the Swedish Navy. Both Bucker and Heinkel must have known each other very well, and I am quite convinced that these two gentlemen conducted business on a very personal level.

"4. The next Heinkel design was the Casper S2 which was a slightly modified S1. This type is supposed to have flown in 1923, and since Heinkel had already left Casper the type became the HE2. (Possibly, Heinkel actually built the prototype in Germany, in which case it would be the first aircraft he built on his own.) This may be the aircraft shown on page 99 of Nowarra's DIE VERBOTENE FLUGZEUGE. In 1923, five Hansa Brandenburg Type 42 were ordered by the Swedish Navy from Svenska Aero and serialled 42-46. I believe that all five were manufactured from scratch in Sweden, but since no HE2 were registered in Germany it is possible that German-made HE2 were exported to Sweden and re-erected by Svenska Aero as the first five Type 42.

"5. To further stress the closeness between Heinkel and Bucker (and also with the Swedish Navy), it is to be noted that Bucker flew the new HE3 during the ILUG show in 1923 (winning first place in its class). This aircraft was then sold to the Swedish Navy. Finally in this context, I would like to stress my conviction of how very dependent Heinkel must have been on Bucker and the Swedish Navy both for the starting up his own company and for its survival during the twenties. Besides the aircraft mentioned above, the Swedish Navy bought many more aircraft from Svenska Aero, mostly licence-built HE4 and HE5.

"In the part of the article on the Norwegian use of the Hansa Brandenburg W29 and W33, Colin is not quite correct on some minor points, at least according to a book written by Fredrik Meyer, HAERENS OG MARINENS FLYVABEN 1912-45. This book lists the Norwegian Army as operating two W29 (Make I) s/n 501 and 503. (The Norwegian Army used odd s/n while the Navy used even ones.) The s/n 98/99 Colin mentions are sequence numbers used to denote the 98th and 99th aircraft used by the Army. Six W33 (FF8 Make II) were built by Norsk Aeroplanfabrikk with s/n 505-515 (odd numbers only). S/n 509 was later transferred to the Navy as F.60. Five W33 (FF8 Make III) were built by the Army Aircraft Factory with s/n 517-525 and later transferred to the Navy as F.40, F.36, F.50, F.48, & F.38 respectively. The Marinens Flyfabrikk built 24 W33 under licence with s/n F.52-F.58 (c/n 35-38); F.14-F.20 (c/n 41-44); F.56, F.22, F.24, F.32, F.34 (c/n 48-52); F.14 (c/n 55); F.14 (sic) (c/n 58); F.54 (c/n 62); F.56, F.58 (c/n 65-66); F.10 (c/n 71); F.26-F.30 (c/n 74-76); F.18 (c/n 78); and F.34 (c/n 79).

"Regarding the civil side of Norwegian use, my source is Kay Hagby's Civil Register published by Midland Courtiers Publications. I can find only two W29, one known as N-7 and later reregistered N-5 and sold to the Army as s/n 501. The second was built from W29 parts and w/o on 5 March 1921 before being registered N-5. Perhaps the W29 Colin mentions were used here. Three W33 were also registered, but only one, N-21, from scratch. The two others were N-47 (ex-Navy F.38) and N-48 (ex-Navy F.53). Both N-47 and N-48 were later returned to the Navy.

"Concerning the Finnish IVL A22, I would like to add that their s/n were initially 4D.1-4D.2, 4E.3-4E.26, 4F.27-4F.66, 4G.67-4G.106, 4H.107-4H.122. 4G.99 and 4G.100 were the two sold to Latvia. All surviving aircraft were later reseried in the IL-1 to IL-122 range respectively with gaps for export and w/o's.

"When it comes to the Japanese production, I have seen the figure 310 before, but I would be surprised if this is correct. Colin does not mention it, but other sources say that it was the Japanese Navy that used the aircraft and this would make Japanese Naval Aviation very large for its day since it also operated other types as well. Can any reader supply c/n or s/n ranges for Japanese Hansa Brandenburg production or provide the units that operated these aircraft?"

Stig Jarlevik (SAFCH #316), Blasutgatan 6, S-414 56 Goteborg, SWEDEN

"A. I have some additions to Dan Hagedorn's comments regarding Paraguayan military aviation (SAFO #25):

1. The Cant 10ter was purchased in August 1929.
2. The Cant 26 was sold by Nicolas Bo to the Paraguayan Army. It was lost shortly after arriving in Paraguay, with fatal results to the crew: Capitan Jose D. Jara and teniente Niemman.

3. Bo, a former member of the Italian Air Mission to Argentina and a combat pilot during the Paraguayan Civil War of 1922 (flying SVAs), was Chief Instructor in the Paraguayan Army Air School at Campo Grande until French instructors were contracted. Bo then went on to instruct Paraguayan naval pilots aboard a SAML A3 which he had sold to that service on 29 September 1929.

4. During 1930, Paraguay's 'Aviacion Naval' accumulated 164 flight hours, 460 landings on the ground, 498 landings on the water - with three aircraft: SAML, Cant, and the Savoia 59bis.

5. Regarding the two Macchi M.18 (which along with the rebuilt S.M. 59bis, s/n R-1, were the three aircraft the Navy had in operational service during the war: there were several accidents: August 1934 - 'R-1, R-3, R-5 in operations'; R-5 experiences 'an accident'. February 1935 - air arm inactive due to lack of aircraft; all three machines undergoing repairs. May 1935 - R-3 and R-5 operational; R-3 wrecked under midshipman Fretes Yodice August 1935 - R-5 experiences engine problems during flight; aircraft bursts into flames. The pilot, teniente Martino manages to land on the ground saving the machine.' September 1935 - R-1 undergoing 'recorrida general' (IRAN). The above excerpts came from the memoirs of Captain Jose Bozzano, the 'Director of Military and Naval Aviation' during the Chaco War.

"B. In an earlier issue (SAFO #21), Dan inquired about the insignia carried on a Bolivian Hawk II fighter a photo of which appeared in the book 'Alas De Bolivia' (Amalia Villa de la Tapia, Los Amigos del Libro, Cochabamba, 1974). The 'G.I' in the center of the Iron Cross stands for 'Grupo No. 1' an ad hoc unit created for the defense of Villa Montes, the Bolivian H.Q. in the Chanco. On 19 March 1935, according to Miss Villa de la Tapia, Grupo No. 1 was composed of the following aircraft: Curtiss Hawk II s/n 36 & 44, and CW 14R Osprey s/n 60. Grupo No. II possessed Hawk II s/n 34 & 42 and Osprey s/n 91. A unit insignia appears to have been adopted only by G.I; two very clear photos I possess, taken c. April 1935, of G.II machines (34 & 42) show no unit markings whatsoever.

"C. Regarding the Argentine Fiat G.55 (SAFO #24): 15 were still available for maneuvers held at Parana during February 1959. The 'fable' of the supposed scrapping of the G-55s was started by AEREI (March 1977). In April 1978 AEREI published my letter explaining: 1) that the 36 G.55 airworthy on 30 June 1954 were still 'on hand' on 1 December of that year, and 2) that aircraft of this type had been noted passing through II Air Brigade (Parana) during February 1959. In fact, the Centauro had carried out gunnery exercises with their 20-mm cannon. (Photo recon was provided by II Air Brigade's Fiat G.46s).

Georg von Rauch (SAFCH #536), PO Box 1365, Highland Park, NJ 08904

"In answer to Tor Scott's question in SAFO #25 on the identity of the Lancaster squadron using codes 'IQ', the following is a list of Lancaster squadrons and their codes: 7th MG/XU, 9th WS, 12th PH, 15th LS, 35th TL, 44th KM, 49 EA, 50th VN, 57th DX, 61st QR, 75th AA/JN, 83rd OL, 90th WP/XY, 97th OF, 100th HJ/HW, 101st SR, 103rd PM, 106th ZN, 115th A4/KU, 138th AC/NF, 149th OJ/TK, 150th IQ, 153rd P4, 156th GT, 166th AS, 170th TC, 186th AP/XY, 189th IL, 207th EM, 218th HA, 227th 9J, 300th BH, 405th LQ, 408th EQ, 419th VR, 420th PT, 424th QB, 425th KW, 426th OW, 427th ZL, 428th NA, 429th AL, 431st SE, 432nd QO, 433rd BM, 434th IP, 460th AR/UV, 463rd JO, 467th PO, 514th AZ/JI, 550th BQ, 576th UL, 582nd 60, 617th AJ/KC/YZ, 622nd GI, 625th CF, 626th UM, 627th AZ, 630th LE. So the code 'IQ' was used by 150 Sqd."

Bill Shenk (SAFCH #599), 21957 Crescent Court, Farmington Hills, MI 48024.

"I have read with interest the 'Snippets from SEAR' in the last two issues of the SAFO, and I have some comments to make regarding the Norwegian entries.

"Of the 23 F-104G received by the RNoAF, 18 were RF-104G-L0 rebuilt as F-104G at Bodo Air Force Base in Norway, one was a F-104G-CA, and 4 were TF-104G-L0. Thirteen of these went to Turkey via the USAF in England. Those not delivered to Turkey are: (R)F-104G 62-12237, crashed 10.02.71; (R)F-104G 61-2627, crashed 20.07.71; (R)F-104G 61-2628, crashed 10.02.71 (see above); (R)F-104G 61-2625, crashed 18.09.74; (R)F-104G 62-12238, crashed 10.01.78 (this aircraft has been repaired, but its ultimate fate is unknown to me); (R)F-104G 61-2632, crashed 18.12.80; (R)F-104G 62-12234, crashed 10.09.80; TF-104G 62-12264, crashed 19.11.70; TF-104G 63-8469, to RNoAF Museum; and TF-104G 66-13627, crashed 04.02.81.

"Of the 19 CF-104 and 3 CF-104D obtained from the Canadian AF in 1973-74, those that have not crashed are stored for the time being at Sola AFB. One CF-104 has been delivered to the RNoAF Museum.

"Regarding the 5 SK-50B Safir obtained from the Swedish AF: the serials 50040, etc. are the Swedish one. The RNoAF serials are 040, 058, 0071, 0074, & 076. Note the mixture of 3- and 4-digit numbers; I'll come back to this in a second.

"In SAFO #25, the serials for the MFI-15 Safari are mistakenly given as 0803 to 0805, etc. As seen on the enclosed photo (Editor's note: not suitable for publication), the serials are clearly 806, etc. Serials known to me are 803-806, 810-813, 815, 816 (crashed), 0836, and 840. If the last batched mentioned by SEAR is correct, there will also be 0837-0839. I do not know whether 809 is a mistake for 806.

"Now to the reason for the mix of 3- and 4-digit serials. In 1972, the RNoAF abandoned the WWII-style squadron codes and replaced them with the last three digits either from the s/n for aircraft obtained from another air force or the last three digits of the c/n for aircraft obtained directly from the factory. If this procedure resulted in two aircraft with the same code number, the more recently received aircraft would be allotted 4 digits. In the case of the Safari, 836 belongs to a CF-104 and 837-839 to 3 Piper L-18-C. In the case of the Safir, 071 and 074 belongs to 2 Westland Sea Kings.

"While the F-16 are being delivered directly from the Fokker factory, the Norwegian codes are based on the USAF s/n which, for some reason, have been assigned to these aircraft."

Knut H. Naess (SAFCH #519), Framnesvegen 10, Jeløy, N-1500 Moss, NORWAY

"I have the following magazines for sale or trade (postage \$0.40 each; 4 or more \$1.50): AIR CLASSICS V.2 #3,5,6; V.3 #3,4; V.4 #4,6 \$3.00: V.5 #2,3,5,6; V.6 #1,2,3,4,5,6; V.7 #1,2,3,4,5,6 \$2.00: V.8 all; V.9 #1,2,3,4,5,6,8,10,12; V.10 #2,3 \$1.75: V.2 #5; V.3 #3,4; V.4 #6 (slight cover damage) \$2.00: V.4 #5,8-5,9-2,10-6, 12-1 (cover clipped) \$0.75: Winter 73 GULVEN ERA LIGHTPLANES \$3.00. AIRPOWER V.2 #1,2,3,5; V.3 #1,3,4,5 \$2.50: V.5 #4; 6-6; 7-2,3 \$1.50. WINGS V.1 #3 \$3.50; V.2 #1,2,5,6; V.3 #1,3,4,5 \$2.50: V.4 #3,5; V.5 #1,2,3,6; V.7 #2,3,4 \$1.50: SPECIAL #1 THUNDERBOLT \$3.00. AIR PROGRESS 34/5 \$2.50; F59,Sp60,F60,Sp61,F61 \$2.00: W61/2,Sp62, Su62,F62,W62/3,2/3,4/5,6/7,8/9,10/11 63; 1, 2/3,4/5,6/7, 8/9,10/11 64 \$1.50: 1,2/3,4,5/6,7,8/9,10, 11/12 65 \$1.00: 1,4,5/6,7,8,9,10,11,12 66; 1,2,3,5,7,8,9, 11 67; 2,3,6, 7,8,9,10,11,12 68; 1,2,3,4,5,6,8,10,11,12 69 \$0.75: 3, 4,5,6,12 70; 2,5,10 71; 1,3,6 72; 6,7,8,9 73; 1,3,6, 74; 1 75 \$0.60: 4,6 68 (poor) \$0.25. SPORT FLYING 4 73; 8,10 78 \$1.50. AIR COMBAT V.2 #1 \$2.00: V.4 #4, V.7 #4 \$1.50. AIR ACES 1,7 78 \$1.25. AVIATION 4 40 (some cover damage) \$3.00: 11 40 (no back cover, some water damage) \$2.00: 1 41 \$3.00: 8.43 (some water damage, no back cover) \$2.50. POPULAR AVIATION 12 39 (some wear); 1 40 (excellent) \$4.50. WARPLANES OF THE WORLD #2 (1943) 98p \$2.00. AIR FORCE 12 69 to 12 70 \$1.00 (or all 13 for \$11.00). KOKU FAN 4 59 \$2.00. SKY FIGHTERS (pulp fiction) F 47, W 48 \$4.00."

Doug Wendt (SAFCH #71), 910 Kuhns Rd. Whitefish MT 59937

"There seems to be lot of confusion over the T-38's formerly owned by West Germany and based at Sheppard AFB, Wichita Falls, Texas. I was an instructor pilot with that unit (3630th PTW/80 FTW) until 1975, and I now monitor it from Air Training Command HQ. The Germans originally bought 46 T-38A's and 47 T-37B's for use in their Undergraduate Pilot Training (UTP) program. 'Normal attrition' reduced the number of T-38's to about 42 by 1978, with no replacements. The T-37's remained at about 44-45 through this period; however, they were rotated around ATC, with no attempt to keep the German ordered/owned aircraft at Sheppard. (Bob Pickett should be able to confirm this, with his list of aircraft tail numbers vs location.) The Germans no longer own the T-37/T-38 aircraft, as their UPT program has been superseded by what is called Europe-NATO Joint Jet Pilot Training, or ENJJPT. In a very complicated arrangement, the aircraft were purchased from the West Germans and assigned to the ENJJPT program at Sheppard AFB. In time, I expect the tail numbers to change as the aircraft are rotated for modification, etc.

"There will be no conversion to the AT-38B configuration. ENJJPT graduates will be given the normal Fighter Lead-In Training at Holloman AFB's 479th Tactical Training Wing - the only Wing in the USAF with AT-38's. The AT-38 modification had been considered by Turkey for its T-38's, but I don't know if they, or any other Talon operator, ever bought the modification, which provides a very limited weapons carriage ability. (I flew AT-38's with 479th TTW in 1987-79.) I don't know if this will settle the issue, but it should help.

"One other thing. In 1971, the Sheppard Wing picked up an addition mission: training Viet-Nam AF students in a new squadron (3632FTS/88FTS) with its own aircraft - for obvious political reasons. In 1975, with closure of Webb AFB and its 'fixed-wing' conversion course (for AF helicopter pilots without any fixed-wing experience), the 80th FTW at Sheppard AFB acquired this mission and 16-18 additional T-38 aircraft. These aircraft were used only by USAF personnel and not by Germans or any other nationalities. All these additional aircraft made it appear, to the casual observer, that the Germans had more aircraft than they actually did, since all of the wings aircraft were on one ramp (in a very specific parking arrangement, again for political reasons). More details are available if anyone is interested.

Bob Mills (SAFCH #139), 61 Outer Octagon, Randolph AFB, TX 78148

"The decal sheet for the Italeri 1/72-scale F4E kit includes Malaysian markings; a rare commodity! The small national insignia seem perfect for an Alouette III, the large ones are about right for a Sea King, and all six are appropriate for the Tutor. The kit itself is excellent and goes together with a minimum of effort. The fuselage is split horizontally with the upper part integral with the wings. Some filler was needed along the forward fuselage, but the fit is better than I've seen for this type of construction.

"I received a Matchbox Sea Harrier from England. It is a poorly engineered kit and requires lots of filler around the wing joints. But, a honest-to-God Sea Harrier. The kit contains decals for an Indian a/c as well as for 801 Sqn. FAA.

"CAF C-103's at Trenton are gradually being re-painted in an overall 3-tone grey; a wrap-around 'glop' scheme of three greys ranging from gunship grey to a light blue-grey. Roundels and fin flash are of conventional design, but in flat black, as are all other markings including codes. I have color photographs.

"Finally, I've sent many photos to Koku-Fan, the first batch last February. They printed one (a RAF Vulcan) but I've heard nothing from them. Have any other readers been dealing with them and with what success?"

Michel Barnes (SAFCH #502), 569 Dufferin St., Toronto, Ontario, M6K 2B1 CANADA

"The Ciskei is to have its own Defence Force with a small airborne unit already in existence. South African Air Force C-47's are used at the moment. This is a temporary arrangement and it can be assumed that, in due course, the Ciskei will acquire its own transport aircraft. The same will happen in Bophuthatwana, Transkei and Venda."

Fred E. du Toit, Air Attache, Embassy of South Africa. (Via Creighton Kern (SAFCH #541) who also writes that MILITAIR 1982 reports that the Bolivian Navy and Guinea-Bissau Navy have aircraft of their own; markings not known.)

"A few comment on SAFO #25: Regarding Mr. Kern's letter; to the best of my knowledge, there was no Royal Netherlands East Indies Navy, much less as air service of same. The Netherlands East Indies Army was under the Colonial Ministry, not the War Ministry, and therefore a totally separate organization. The Netherlands Navy maintained the bulk of its fleet in the East Indies, and it is my understanding that the air arm of the Netherlands navy prior to WWII was looked upon as essentially an East Indies force, with little in the way of operational aircraft in the Netherlands itself.

"To Mr. Rouze's letter concerning the PRVN air force, by which I assume he means the air force of the Viet Cong government that took over South Vietnam after the fall of Saigon, one must remember that such a government, if it ever was a functioning entity, was absorbed by North Vietnam in a matter of days. I doubt that anyone had the time, or inclination, to create a set of markings for this ephemeral nation. As an aside, a recent TV program, 'Vietnam - The 10,000 Day War', showed A-37s flown by the VC in the closing 3 days of the war; these aircraft carried normal ARVN markings. As the VC flag was red and blue with a yellow star, I imagine that any ad-hoc marking would be created by simply painting the white star on ARVN aircraft yellow; but of course I have no evidence of that.

"In the August 1982 issue of SCALE AIRCRAFT MODELLING, there is an excellent article on the Air Force of Rhodesia, now Zimbabwe, with numerous photos and side-view drawings. Included is a set of decals for the roundels of the Rhodesian AF, both pre- and post-UUDI. Unfortunately, markings for the Zimbabwe AF are not included; these consist of a golden-yellow bird (looking like a pigeon with arms) sitting on a crown. This is relatively small, and is the only national insignia carried on the aircraft of the Zimbabwe AF."

Kim Margosein (SAFCH #104), 17741 S. Walter, Lansing, IL 60438

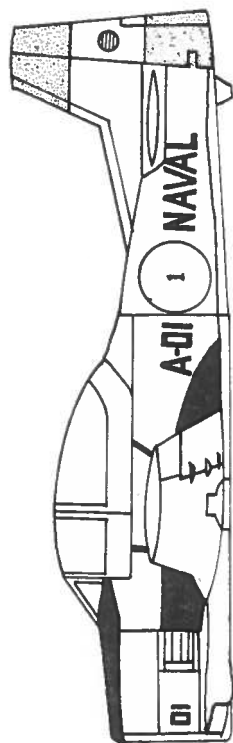
"If there are any wargamers among SAFCH's members who would like to do some air combat with SPI's AIR WAR or FOXBAT AND PHANTOM, or with Gamescience's MIG KILLERS, I'd welcome hearing from them."

Bill Retoff (SAFCH #596), RR2 Box 6, Minonk, IL 61760

"I have completed a lengthy article on shipboard aviation of the minor powers, 1919-39. This article will eventually be published in WARSHIP INTERNATIONAL, the journal of the International Naval Research Organization. However, I am having trouble finding sufficient illustrations for it. I need photos of aircraft aboard Argentine, Australian, Chilean, Chinese, Danish, Dutch, New Zealand, Portuguese, Spanish, Swedish, and Soviet warships. I will reimburse for all expenses and postage costs if so desired."

Richard D. Layman (SAFCH #619), 50 Mohawk Ave., Corte Madera, CA 94925

(Editor's note: I've asked Dick if his article could be reprinted in the SAFO. He replied that it was alright with him, but that he would have to get the permission of the INRO. He sees no reason why they should object and "they might well be quite pleased". It seems to me that this is an excellent opportunity for SAFCH members to participate in an important bit of research into aviation history.)



T-28 Fennec: Argentine Navy. Aircraft is light grey over white. Rudder stripes are in the national colors (light blue and white) with the upper stripe continuing across entire vertical stabilizer. (1) indicates the position of Argentine Navy roundel. Wing markings consists of Argentine Navy anchor in four positions. All lettering is in black; anti-glare panel and exhaust panel are also black.

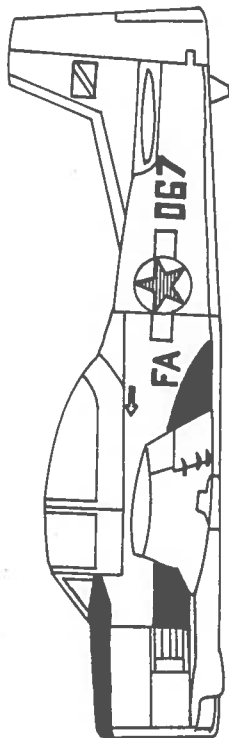
Sources for both these schemes are unidentified magazine clippings loaned to me by local IPMS members. Any member with other T-28 schemes, please pass them along and I will do up a T-28 Special for the SAFO.

I would like to take this opportunity to thank the many people who have provided the information, photos, sketches, and drawings that have made this series on Latin American aircraft possible. Regulars like Dan Hagedorn, Mick Burton, Jorge F. Nunez Padin, Carlos Fortner, and many other have been extremely helpful. Without them I would be unable to provide this information to the SAFO.

This research has now reached a point where these reports will be coming out on a more frequent basis. Of course, there is still a lot of information out there. Everytime I think that a particular aircraft type is covered, a new scheme or some new piece of information comes to light. If any member has any information, photo or needs a sketch of the aircraft to fill in, please contact me. For those with questions, again contact me and I will try to answer them to the best that I am able.

"I recently finished a model of a F-86 in Tunisian markings (based on an IPMS article in DIRTY PLASTIC). Other recent additions to my collection are a Guatemalan P-26 and an El Salvadorian MD-450. My collection now contains 82 countries, and finding good projects for the remaining countries is getting difficult. Does anyone have information on the following: Yemen/PDRY Migs 17, 21; Sudan: Migs 17, 21; Burma Sabre; Laos Mig 21; Mozambique Mig 21; Angola G-91 or Mig 17, 21; Madagascar Migs; any African fighter/attack types." Nick.

Nick Waters (SAFO #2), 830A Kirkbride Ave., Pearl City, HI 96872.



T-28D Congolese Air Force, circa Congo Civil War. Aircraft flown by mercenaries. Aircraft appears to be light grey over white. I have no information on wing markings of this aircraft. However, the "standard" position for the period was upper left and lower right. I would appreciate more information on this aircraft and on the B-26 that were also operated by "Merc's" during this time frame.

"Regarding the T-28/Fennec (SAFO #25), I would like to be of some help by adding a little information.

"HONDURAS: Most probably the 5 T-28A received by the FAH were serialised FAH-212 to FAH-216 between a batch of T-b ending with FAH-211 and a batch of T-41D starting with FAH-217. The 8 ex-Moroccan Fennecs registered HR226A to HR233A which were impounded in the States, but they seem to have finally made it to Honduras because they were reported in mid-1982 as sporting the following serials: EAM-226 (ex51-7632 Fennic #01), EAM-227 (ex51-7844 Fennic #04), EAM 228 (ex52-1226 Fennic #23), EAM 229 (ex51-3557 Fennic #43), EAM-230 (ex51-3530 Fennic #49), EAM-231 (ex51-3528 Fennic #52), EAM-232 (ex51-3565 Fennic #56), and EAM-233 (ex51-3627 Fennic #64). EAM = Escuela de Aviacion Militar. It seems that the serials would not have been changed if these aircraft had remained in the States.

"ARGENTINA: I agree that the Air Force's T-28 were not Fennecs nor T-28D, but T-28A. The received 58 examples, serialised E-601 to E-658. The Navy received 65 Fennecs, 18 of which, when wfu, were passed on to the Uruguayan Navy as 401 to 418.

"Also on the subject of Argentina, it is a curious fact that some F-86f remain in service with the Air Force. About 12 were overhauled and fitted with new avionics and Sidewinders, and are serving with an unknown unit which is probably an OCU (Operational Conversion Unit) based at Cordoba. Does anyone have specific information?"

Jose Luis Gonzalez Serrano (SAFO #141), Galileo, 46, 3º Izquierda, Madrid-15, SPAIN

POA

A FIGHTER AIRCRAFT OF THE RUSSIAN ARMY OF LIBERATION

The information in this article was obtained from a man who served as a fighter pilot in the Air Corps of the Russian Army of Liberation (POA - Russkaya Osvoboditelnaya Armiya - R is written like P in the cyrillic alphabet). During the early and mid-1970's when this information was gathered, this gentlemen lived in the US and he was a member of the Civil Air Patrol. He gave the information reported below to fellow CAP member Marty Snow. Understandably, he was quite reticent and vague about his experiences in the POA for fear that what he had to say might effect former comrades still behind the Iron Curtain. In consideration of this concern, we will not use his name.

His parents fled the Ukraine during the Russian Civil War and settled in Romania. He enlisted in the Romanian AF, received his pilots training there, and flew the IAR 80 (which he liked). Then, in late 1942 or early 1943, he transferred to the POA.

The exact area of operation was not mentioned, but it was probably on that part of the Eastern Front controlled by the Romanian forces. The aircraft of his squadron were battle-worn Bf-109 E-1s that had been more or less upgraded. The nose machine guns were removed, but the gun troughs were not faired over. A 20-mm cannon was installed to fire through the propeller spinner, and the wing armament remained the 12.7-mm machine guns. The standard nose filter was used. The leading-edge slats were quite unpopular, and were generally wired shut. However, the ailerons were linked to the flaps when the flaps were down, and drooped slightly. The aircraft were also fitted with the armored back plate and canopy from later model E's, and a 300-liter drop tank was fitted.

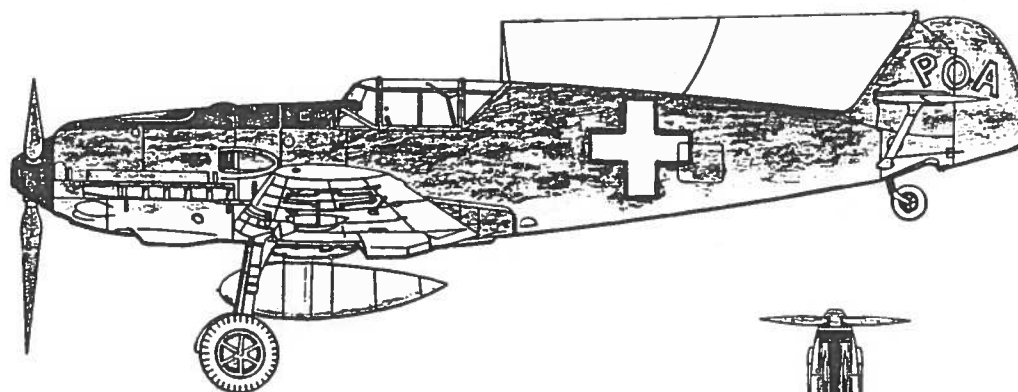
The aircraft were painted mottled green fuselage with solid green upper wing surfaces, with light blue undersides and under the fuselage mottle. The engines were not in the best of shape, so heavy exhaust stains were

present. The spinner and antiglare panel were flat black, and the wheels gloss black. Markings were white crosses with a uniform black outline. Note that this is similar to Hungarian markings for the period; it may be that these aircraft were Hungarian AF hand-me-downs. "POA" was painted on the tail in white. All aircraft were identical and carried no personal markings to prevent anyone from being singled out as a target. (The drawings do not include the almost universal "Eastern Front" yellow fuselage and wing bands, as they were not mentioned. However, we feel that this was an inadvertant omission on his part.)

The squadron did quite well in the air, the lowest score in the unit being 15 "kills", our source having 27 confirmed "kills". In his last combat, he and his wingman took on 5 Yaks, and he was shot down and wounded, and his wingman killed. When he came to a field hospital, he learned of his promotion to Major. In the meantime, his unit was ordered to the Romanian oil refineries to act as air cover against American bombing raids. As he wanted to fight for a free Russia, not against the United States, he deserted his unit and was smuggled out of the country, eventually making his way to the US.

Marty Snow and Kimberly Margosein (SAFCH #104), 17741 S. Walter, Lansing, IL 60438.

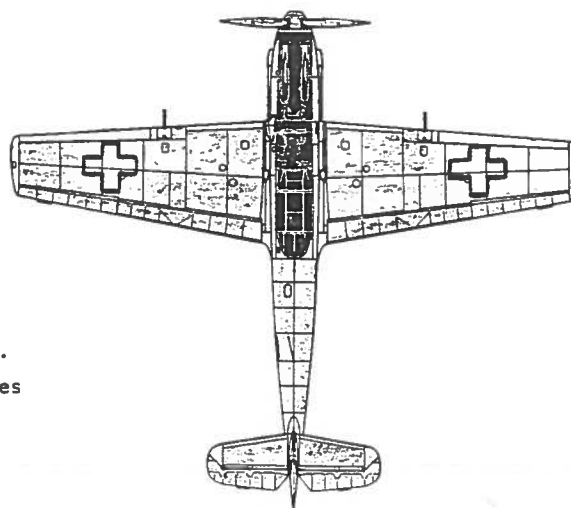
(Postscript: Unfortunately, the person who supplied the above information has gone to Brazil to help organize a CAP-type outfit there and can no longer be reached for further comment. I can not vouch personally for the information here; for all I know someone may have been pulling Marty's leg. However, a couple of sources have referred to the POA, so the outfit really did exist. I'm always looking for more information on the history and aircraft of this interesting unit, so if anyone knows anything please contact me at the above address. Kim.)



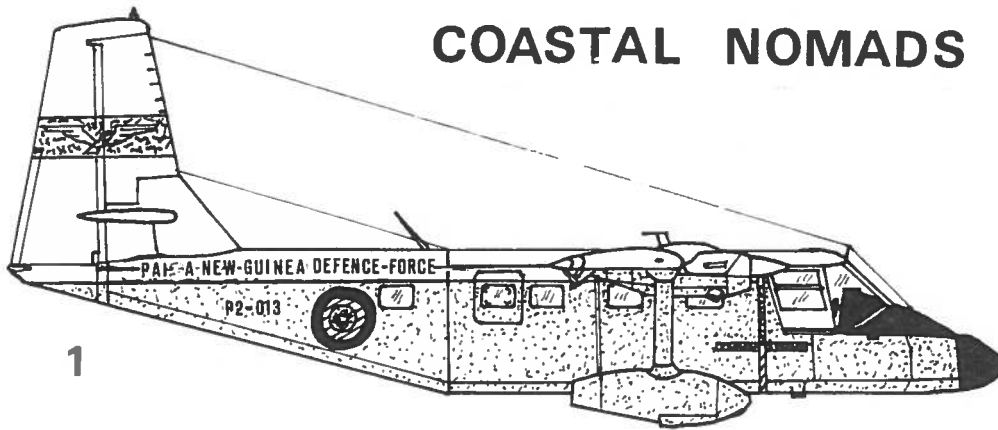
POA Bf 109E-1

FUSELAGE: Mottled dark green over underside light blue;
White cross with black surround, White 'POA';
Flat black nose panel, prop spinner and blades.

WINGS: Solid dark green topsides, light blue undersides
Gloss black wheel hubs.

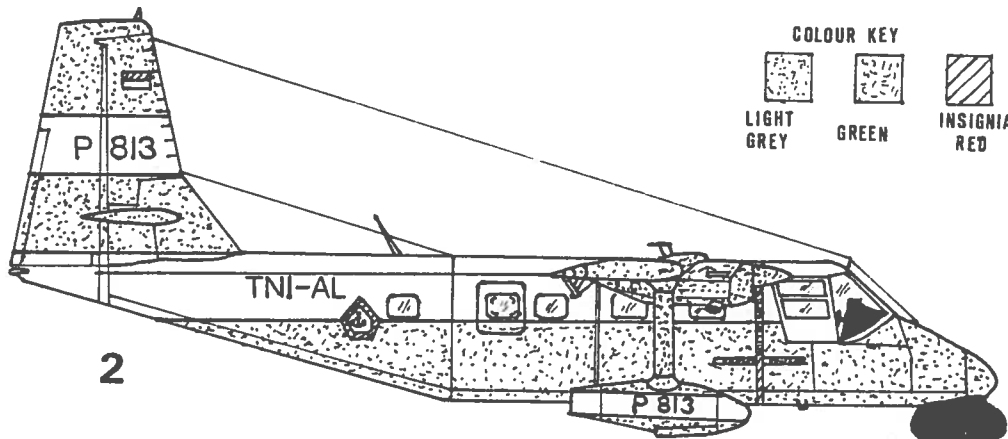





COASTAL NOMADS



Not to Scale.

823
SAFCH #465



COLOUR KEY
 LIGHT GREY
 GREEN
 INSIGNIA RED

2

1. GAF Nomad Searchmaster B, P2-013, Papua New Guinea Defence Force, 1981. Upper surfaces, spinners, and cockpit frames: white. Under surfaces: light grey. Markings: Serial, inscriptions, anti-glare panel, and radome - black; warning stripe - red with white "PROPELLOR", side stripe white with red "DANGER". Insignia: Roundels - black, red, & green with yellow "Bird of Paradise" in the center. Green stripe with yellow stylised Bird on fin.

N.B. The PNGDF has three Missionmasters (renumbered P2-010 to 012, and they have ordered three Searchmaster B (P2-013 to 015) of which 013 was the first to be delivered.

2. GAF Nomad Searchmaster L, P-813, TNI-AL (Indonesian Navy), 1981. Overall: light grey. Fuselage top, fin, and undercarriage housing stripes: white. Markings: Serial numbers, "TNI-AL", radome: black; warning markings as above. Insignia: Pentagon - red & white with black anchor; fin flash - red & white.

N.B. Both aircraft illustrated have bubble observation windows on both sides of the fuselage. The TNI-AL has twelve Searchmaster B (P-801 to 812), and have ordered six Searchmaster L. The Searchmaster B is equipped with the Bendix RDR1400 radar system, while the Searchmaster L has the Litton LASR-2 radar system.

Mick Mirkovic (SAFCH #465), 11/32 Curlewis St., Bondi, NSW 2026, AUSTRALIA

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"On Sunday, 26 August 1979, Mexico City's TV Channel 13 showed a documentary called "The Final Offensive" or "The Fall of a Dictator", filmed by Mexican TV cameramen in Nicaragua during the last months of the fighting to overthrow Somoza. This excellent two-hour program consisted of film of action on both sides including shots inside the rebel sanctuaries in Costa Rica.

"Regarding aircraft, it presented the following:

"(1) Three aircraft flying in formation; they appeared to be CASA C212 painted white with a roundel under the port wing.

"(2) Cessna O-2 apparently overall white with striped insignia on the rudders (outsides only) and a black "320" on the nose. This particular a/c belonged to a deserter from Somoza's AF and was filmed in Costa Rica. There were many shots of O-2, described as 'Push-Pull', firing rockets at the guerrillas.

"(3) AC-47: No insignia visible, apparently white.

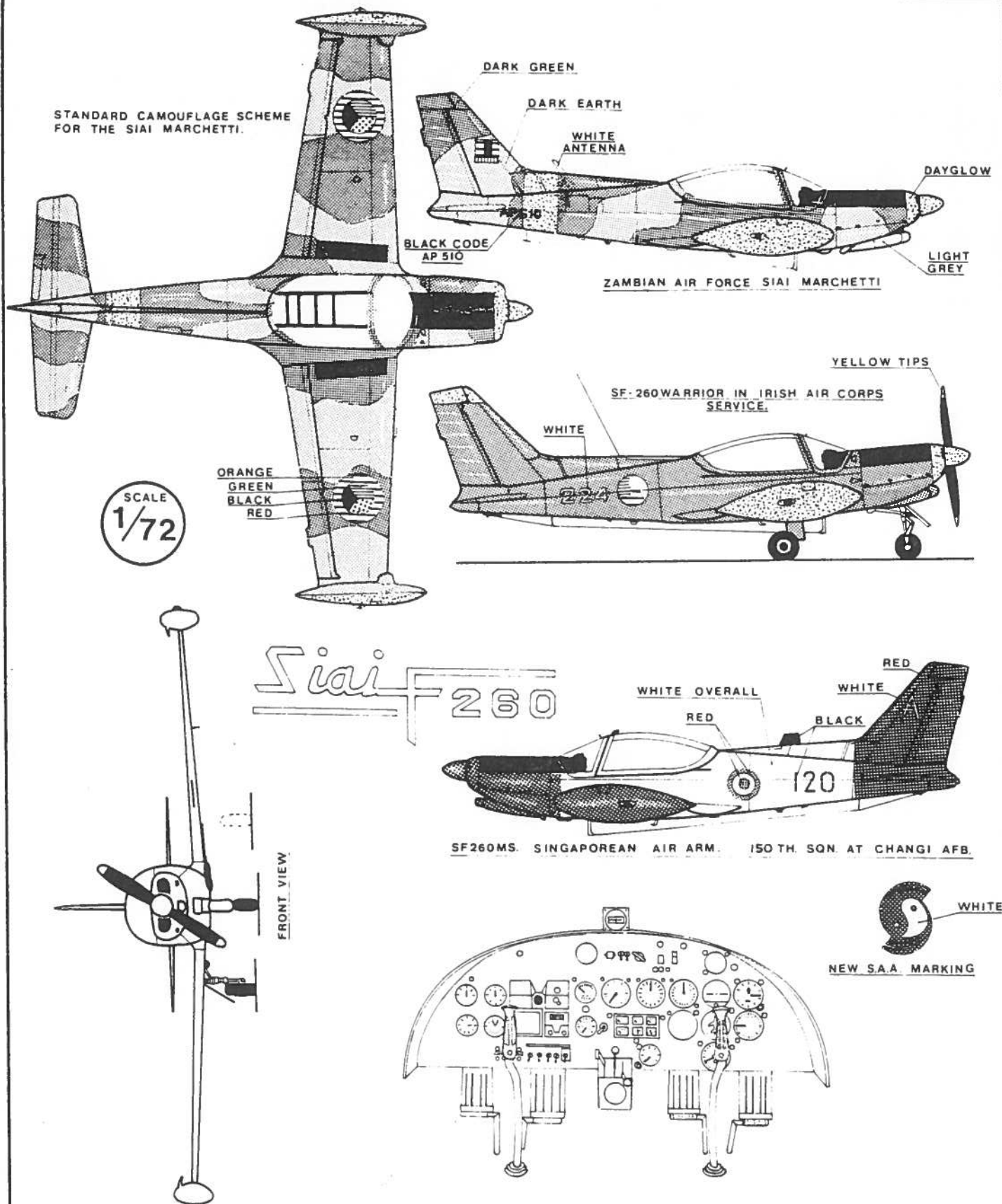
One was seen firing forward(?).

"(4) T-33: Apparently white, with stripped rudder, roundel on fuselage, black antiglare, and no number.

"(5) C-130 Hercules of the Spanish AF, in Vietnam type camouflage, with a good closeup of the squadron insignia: a circle with an elephant with an upturned trunk and a small white rectangle with a black St. Andrew's cross on his buttock. This plane rescued Spanish and Mexican citizens living in Managua. (The Mexican AF couldn't rescue Mexican citizens since diplomatic relations were severed between Mexico and the Somoza Government.)

"(6) Boeing 727 'Fuerza Aerea Mexicana', which carried the Nicaraguan Provisional Government from Costa Rica to Managua after the triumph of the revolution. It also carried some US officials."

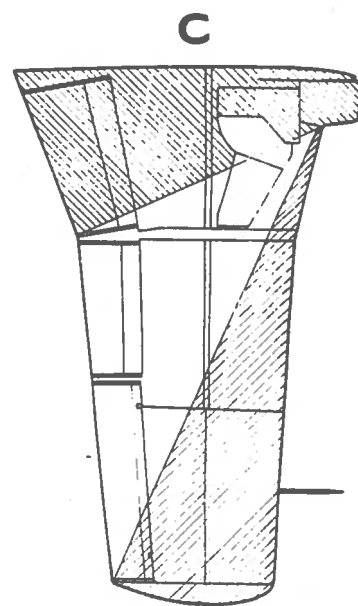
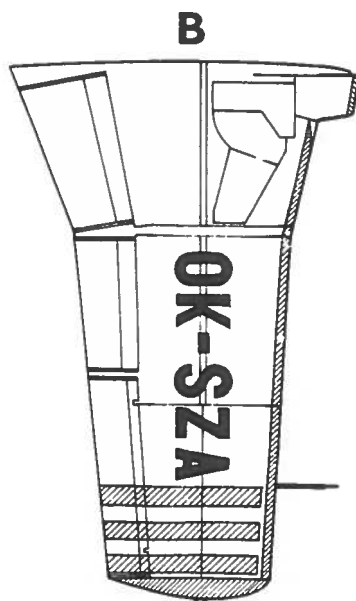
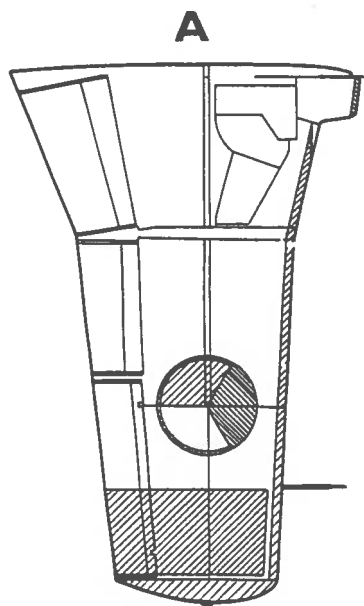
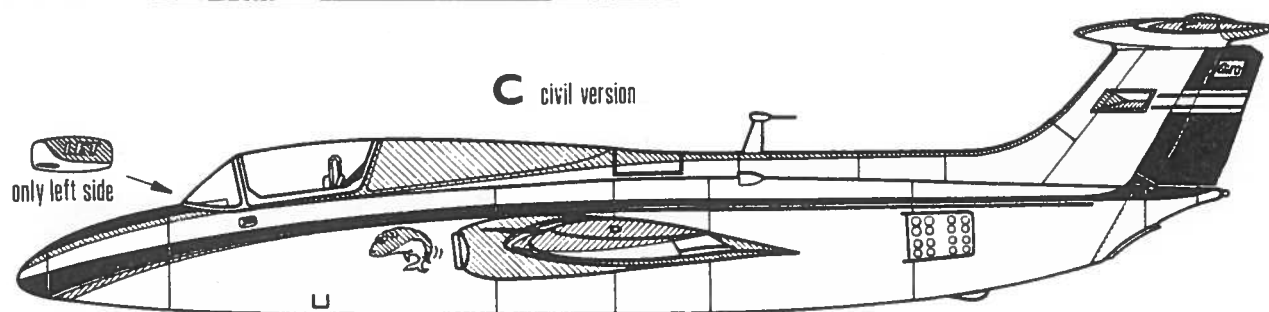
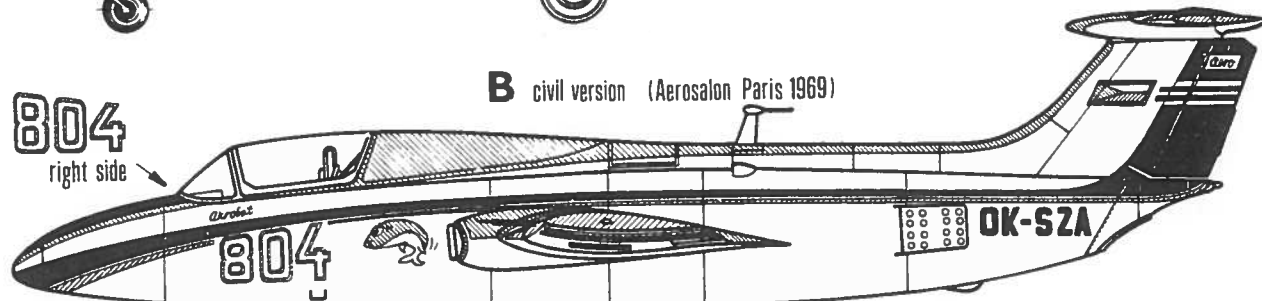
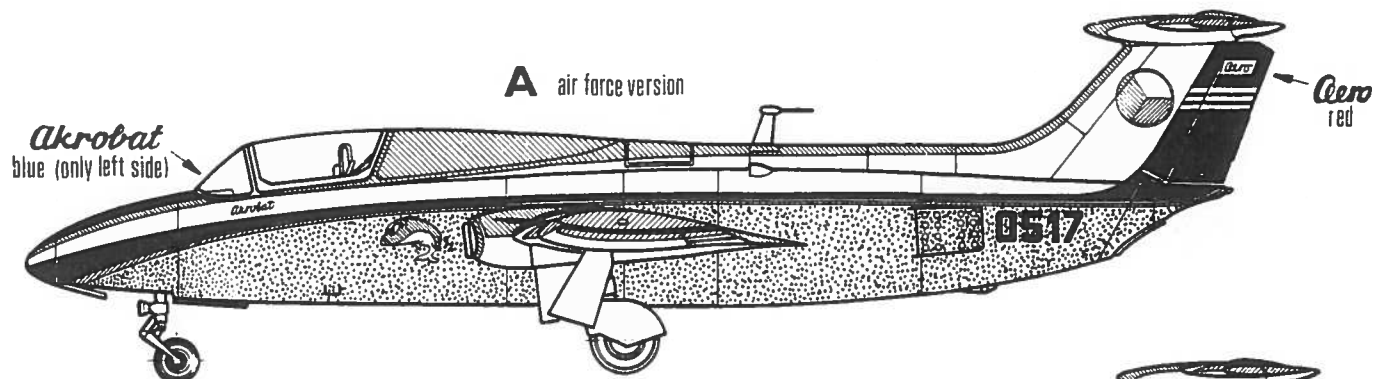
Ismael Garcia Llaca (SAFCH #53), Monte Alban 600, Col. Vertiz Narvarte, 13 D.F., Mexico City, MEXICO.

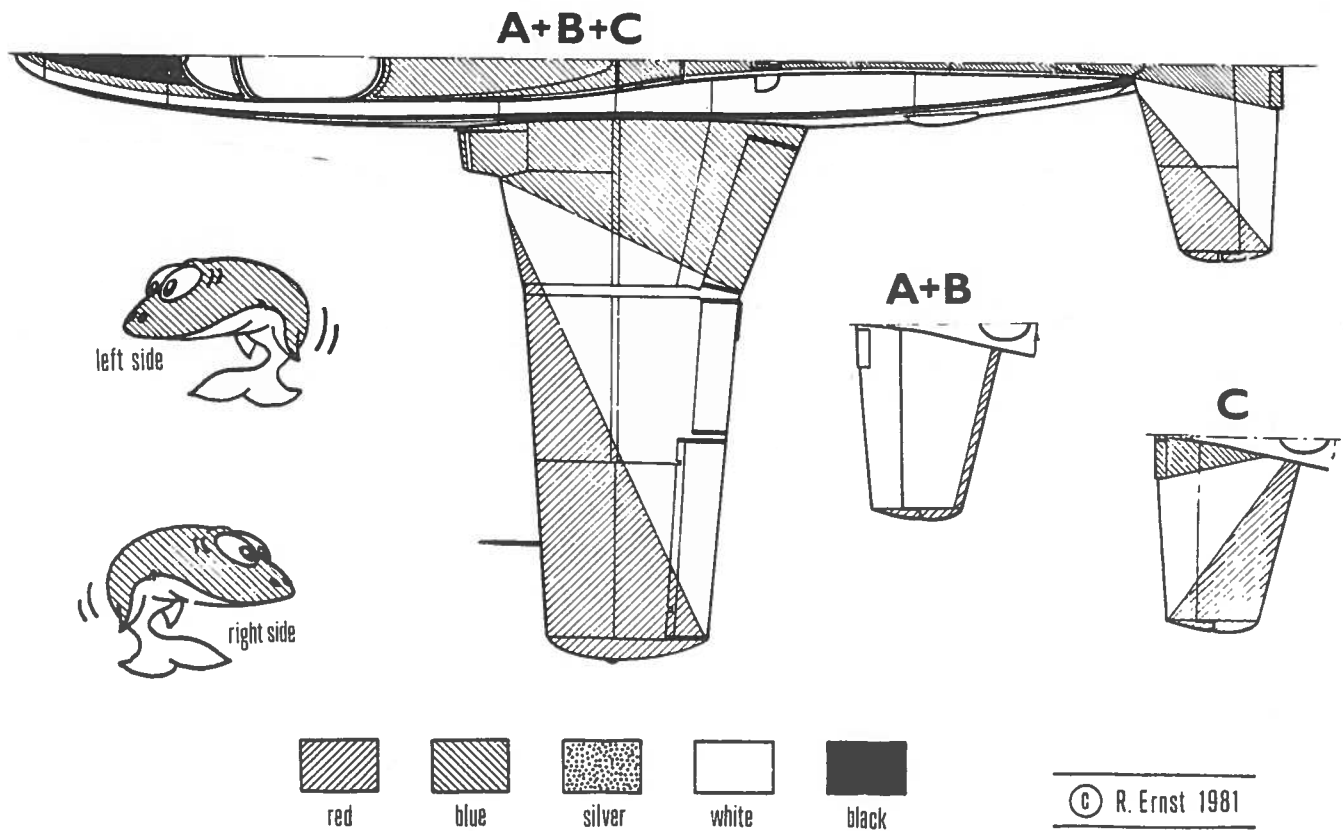


Siai Marchetti 260.

DRAWINGS BY E. HOURANT

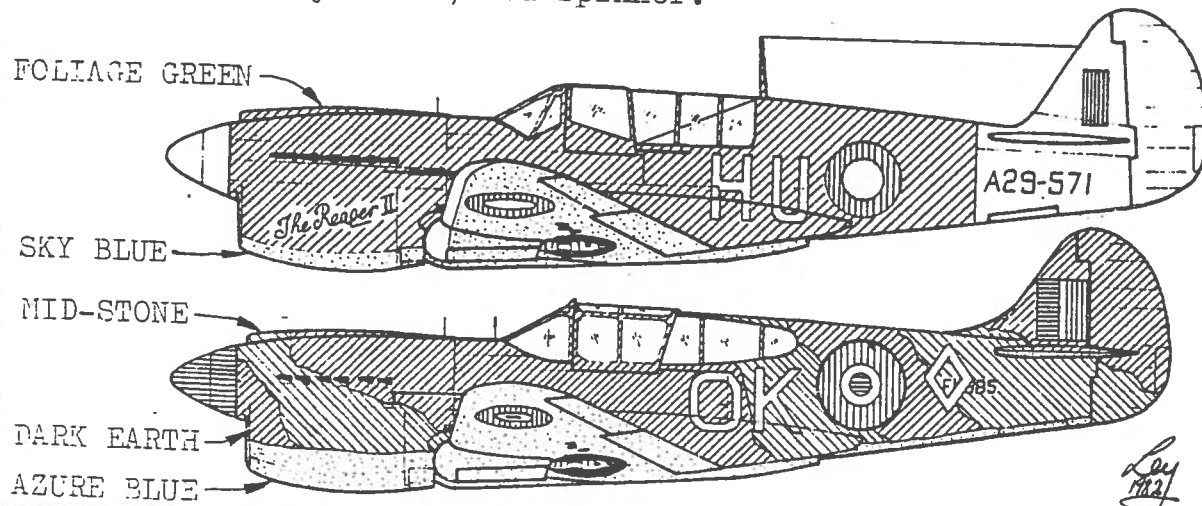
L-29A *Akrobat*





Kittyhawk IV (P-40N), 78 Squadron RAAF, Hollandia 1944.
White codes, identification markings, and name on nose;
grey serial.

Kittyhawk III (P-40K: note fin fillet), 450 Squadron RAAF,
Sicily 1947. Grey codes, red spinner.



These Kittyhawk drawings are reprinted with the kind
permission of the Australian Plastic Modellers Assoc-
iation. (See Abstracts)

Hungarian trainers (3)

